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february 1955

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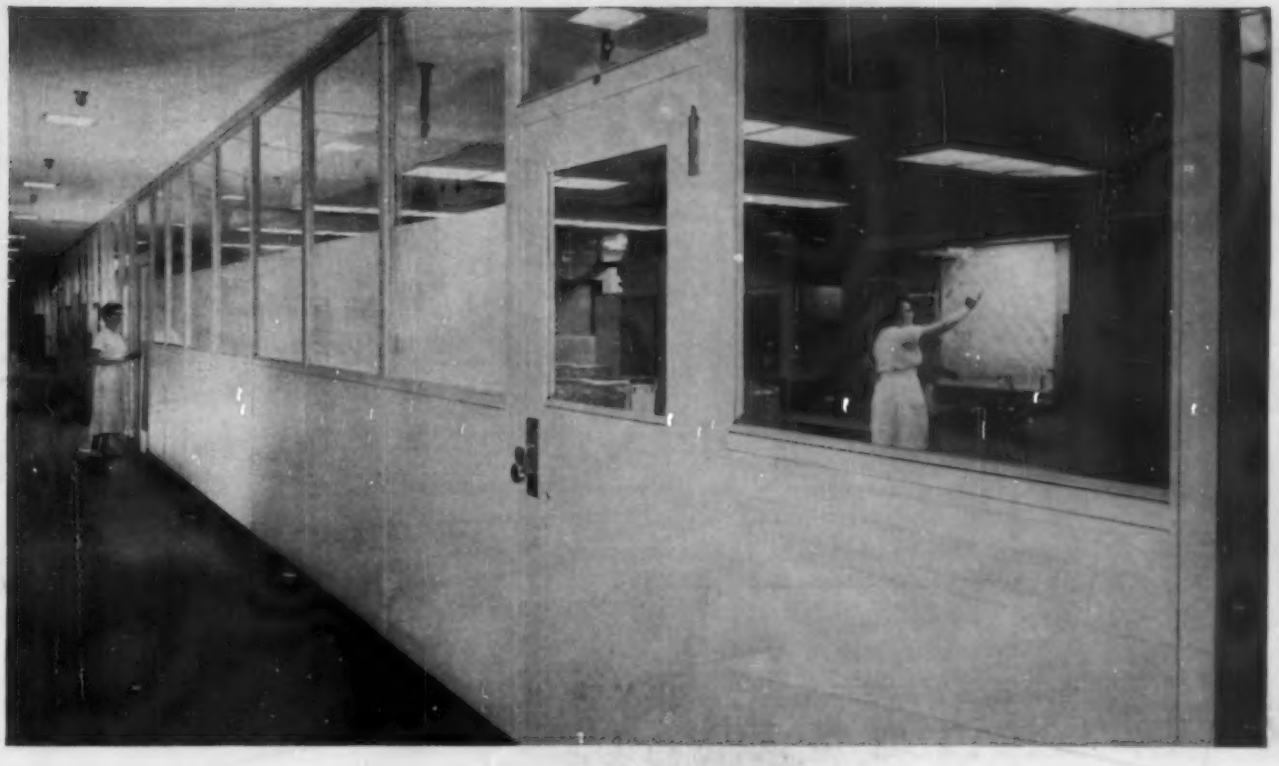

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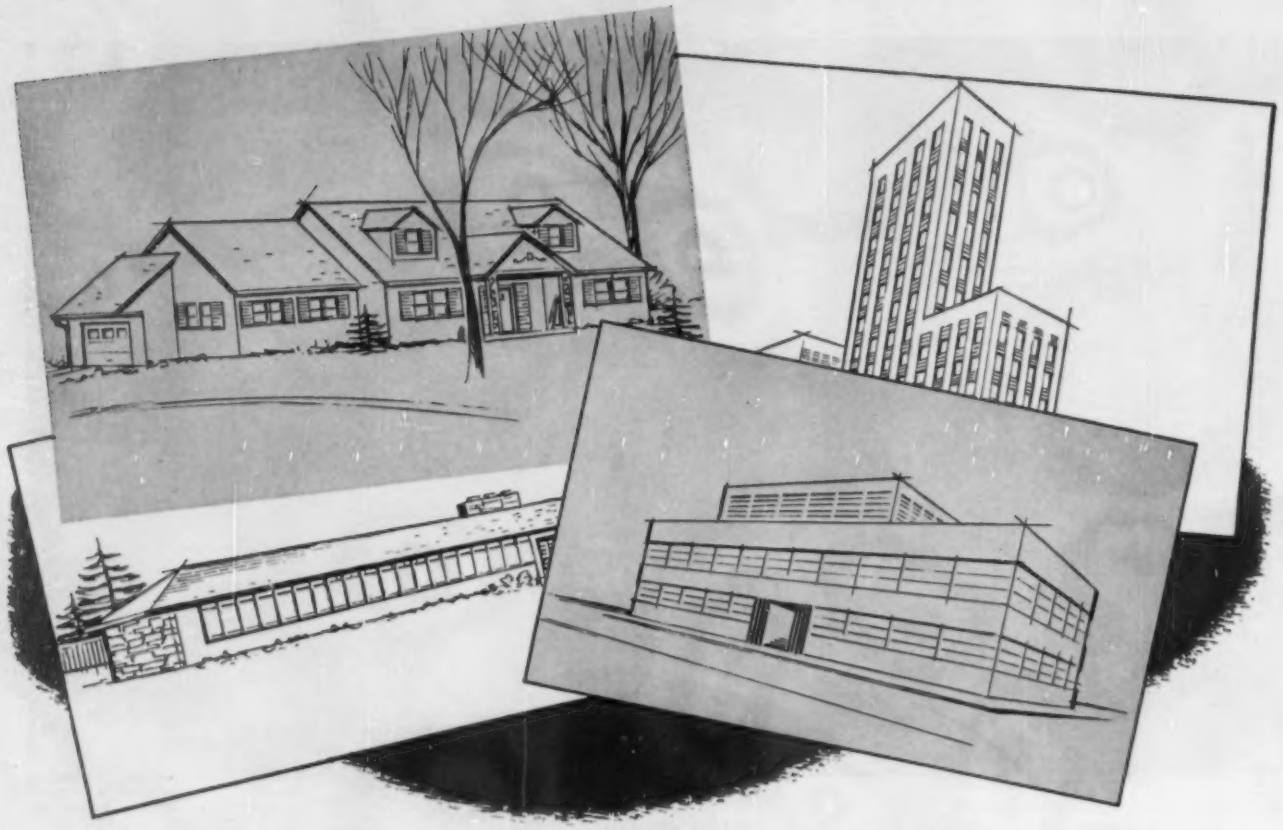

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pa newsletter

February 1955

On January 14 P/A held its second annual Design Awards presentation dinner at Hotel Plaza in New York. Architects from 24 firms in all parts of the country were present to receive their Awards and hear Paul Rudolph, top winner, and Walter Gropius, Jury Chairman, speak of architectural progress. More than 200 architects and leaders in related fields turned out to welcome the honored guests at one of the most distinguished gatherings of the design professions in New York's history.

Communities planning slum-clearance and urban-redevelopment projects may now apply for public or FHA low-cost private housing under the Housing Act of 1954. Albert M. Cole, Housing Administrator, announced that assistance is available to relocate families displaced as a result of slum clearance, highway construction, and clearing sites for public housing.

Real-estate tycoon, William Zeckendorf, is now turning his attention to New York's Penn Station. If preliminary studies prove favorable, passenger station will be modernized below street level and "Baths of Caracalla" above will be replaced by a long-advocated world trade center for the sale and exhibition of imported goods. Foreign consulates would be encouraged to make headquarters in this central location.

National Housing Center, Washington, D. C., scheduled for completion this May, will exhibit latest developments in building materials, equipment, and services. In addition, the Center will house a home-building reference library as well as National Association of Home Builders' headquarters and research institute.

World Plastics Fair and Trade Exposition, to stimulate development of plastics industry in the West, will be held in Los Angeles' National Guard Armory, April 6-10. Featured exhibits will include display of plastic building materials, interior furnishings, and foreign plastics products.

Beaux Arts Institute of Design elected as officers for its 62nd year in architectural education: Chairman, Alonzo W. Clark of Voorhees, Walker, Foley & Smith; Vice-Chairman, John Gray Faron of McKim, Mead & White; Secretary, Arthur S. Douglass of F. W. Dodge Corp.; Treasurer, Thorne Sherwood of Sherwood, Mills & Smith. Percival Goodman, Edward W. Slater, Joseph Judge, and Giorgio Cavaglieri were chosen to serve as trustees for three years.

University of Pennsylvania is offering several graduate fellowships and scholarships in architecture, landscape architecture, city planning, design, and history of art. Applications must be received before March 1 by the Dean, The School of Fine Arts, University of Pennsylvania, Philadelphia 4, Pa. . . . Francis J. Plym Fellowships for travel and study in Europe are open until March 1 to graduates of University of Illinois Department of Architecture. . . . Rotch Travelling Scholarship will be awarded to an architect who has studied or worked in Massachusetts. Applications will be accepted until March 1 by William G. Perry, Secretary, Rotch Travelling Scholarship, 955 Park Square Bldg., Boston 16, Mass.

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Washington Perspective

Frederick Gutheim

Architects who have looked askance at FHA housing work have followed the hearings conducted by Senator Homer E. Capehart with considerable interest. Their suspicions have been confirmed by the shoddy spectacle of builders who testified to architects' fees amounting to five percent of the cost of the work, of which architects received only one half of one percent. They have read of testimony that at least one architect was in the humiliating position of conveying a $10,000 bribe to an FHA assistant administrator, in return for his services in authorizing an additional FHA commitment. They have noted kickbacks made by architects to builders or project sponsors. They have heard of architects employed by FHA to review plans who themselves drew the plans for builders, or were partners in firms who did the same thing. And in general they have shrugged off any hope that good architecture might result from such shenanigans. This impression of the FHA investigation is certainly affirmed from a reading of the report of the Senate Committee on Banking and Currency.

But some developments have been taking place in the FHA which ought to cause architects to change their attitude toward that agency, and toward government-insured housing as a wholesome field of practice. And with some support from the architectural profession, further gains will be possible beyond those achieved at the urging of William F. R. Ballard, Morgan Yost, Norman Schlossman, and other AIA exponents who have exploited FHA's new-found will to respectability and converted it into lasting advantages to architects.

At the top of the change list, of course, is the appearance of Norman Mason as FHA commissioner. The heave-ho given Guy T. O. Hollyday, his predecessor, looked like a pretty dirty trick on the part of an administration that was acting out of political necessity, but Mason's advent allowed forthright measures of reform. The FHA today is probably cleaner than it has been at any time in 20 years. The new attitude toward its work undoubtedly stems from the top.

One major area in which progress is being made is the revision of FHA's Minimum Property Requirements. Past MPR regulations have been so descriptive that creative design was thwarted. You just followed the book. The minimum became the standard. The standard became what FHA officialdom would approve—a code on whim as well as fact, on interest as much as reason. Anyone who ignored this bible, who exceeded the minimum or departed from the standard, ventured into unknown territory where one innovation out of a thousand was adopted. The architect on the short end of these long odds faced self-inflicted penalties, cash losses to his client, or the opprobrium of FHA field offices if he bucked their rulings by appealing to higher officials.

Efforts by architects to get FHA to modify its MPR regulations got nowhere until Senator Capehart started beating the agency around the ears. Today a number of new ways to unhorse the local FHA satraps have been adopted. Their decisions are subject to closer review. Acceptance of new materials or details in any one of the 75 FHA field offices is now communicated promptly to the others. FHA area architects have been hired, and given considerable reviewing authority as well as educational responsibilities. Rigid definitions of insulation, air change, glass area, and other design items are becoming more flexible. Movement toward evaluation of total designs, where glass area is examined in terms of orientation, for example, is evident.

A second major change will enlist the participation of more first-rate architects in FHA projects. When FHA allowed little latitude for design, the difference between the work of first-rate architects and builder-employed draftsmen was relatively small. Builders had little incentive to employ architects; and few architects dissipated their efforts in such an unproductive field. Now positive encouragement of creative design has received official sanction, with appropriate language in the FHA Underwriters Manual. The upward spiral is starting. More good architects will be encouraged to get into FHA work. Their accomplishments can be expected to convince more builders that such services are worth while and deserve fair fees, and to encourage still more architects to master the special skills needed to succeed in the highly specialized and competitive field of mass homebuilding. Where Goodman, Stubbins, Koch, Anshen, and others have operated, in the past, at considerable peril to their careers, and against substantial obstacles, other architects should be able to venture with greater security because of the recent FHA changes.

Beyond that, much remains to be done within an FHA structure Senator Capehart stigmatized as "bureaucracy at its worst." Recognition of the architect's contribution in design still needs to be given more tangible form. His accomplishment in building into the house comfort, livability, consumer demand, and other value-producing characteristics must receive greater recognition. Research is a primary need if the great discretionary latitude now given the FHA evaluators is to be curbed, and if more intelligent performance-type standards are to replace the descriptive code of the MPR's. Whether this is undertaken by FHA or some other agency, the gap must be filled. Education among architects, builders, and officials must be intensive and continuous; and not the least part of it is establishing communications among the three groups who hardly understand each other's interests and attitudes. This is not an automatic progression. A co-ordinated effort by FHA, AIA, and the homebuilders is being made to bring it about, and a considerable response by some rather skeptical architects will be necessary.

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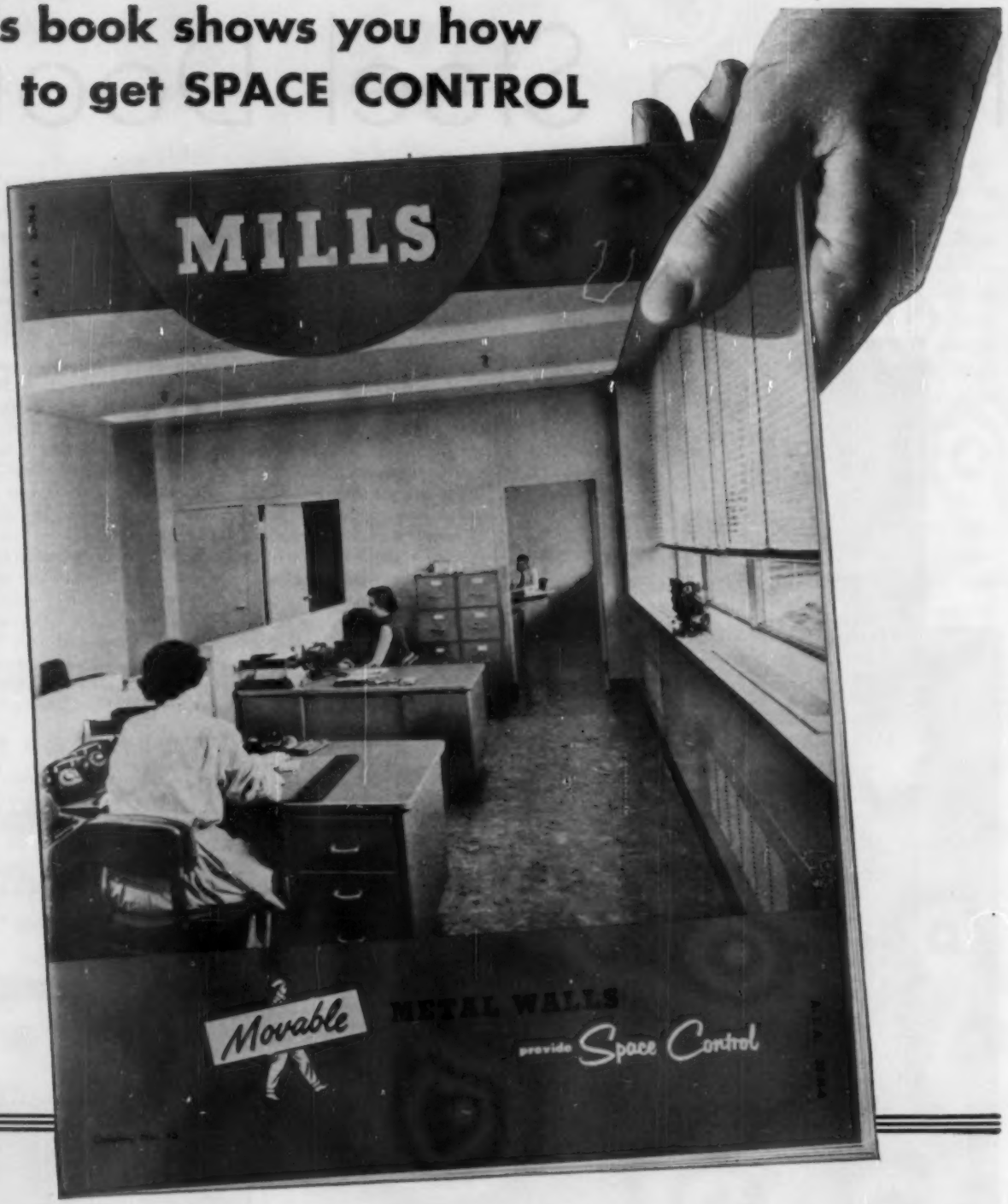

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PROGRESSIVE ARCHITECTURE

February 1955

3 Newsletter

4 **Washington Perspective** by Frederick Gutheim

9 **Progress Preview**

15 **Views**

office practice

75 **What Can A Public Relations Counsel Do?**

76 **Architects' Accounting—I**
By Siegmund Spiegel and Herman Meyer

78 **It's the Law** by Bernard Tomson

the search for form

79 **Introduction**

80 **The Architect and His Community**
Alden B. Dow: Midland, Michigan

General Motors Technical Center

94 **Restaurant Building**

98 **Design Elements**
Eero Saarinen & Associates, Architects

104 **Abstractions in Metal** by Eugene Clute

106 **U.S. Embassy Office Building: Havana, Cuba**
Harrison & Abramovitz, Architects

112 **Solar Orientation: Application of Local Wind Factors**
By Imanuel S. Wiener

119 **Electrical Distribution for Automation**

122 **Structural Significance of Reflective Radiant Conditioning**
By C. A. Mills, M.D., Ph.D. and E. H. Morgan

127 **Spec Small Talk** by Ben John Small

129 **Selected Detail:** Display Case

interior design data

131 Embassy Rooms by Louise Sloane

132 **Executive Office: Stockholm, Sweden**
Knoll Planning Unit

134 **Dining and Conference Rooms: Rio de Janeiro, Brazil**
U.S. Department of State, Foreign Buildings Operations

136 **Conference Lounge: Havana, Cuba**
U.S. Department of State, Foreign Buildings Operations

138 **Interior Design Products**

147 **Manufacturers' Literature**

155 **Products**

164 **Out of School** by Carl Feiss

193 **Reviews**

206 **Jobs and Men**

228 **Advertisers' Directory**

230 **P.S.**

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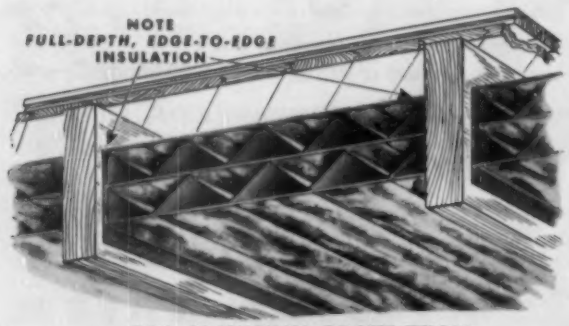

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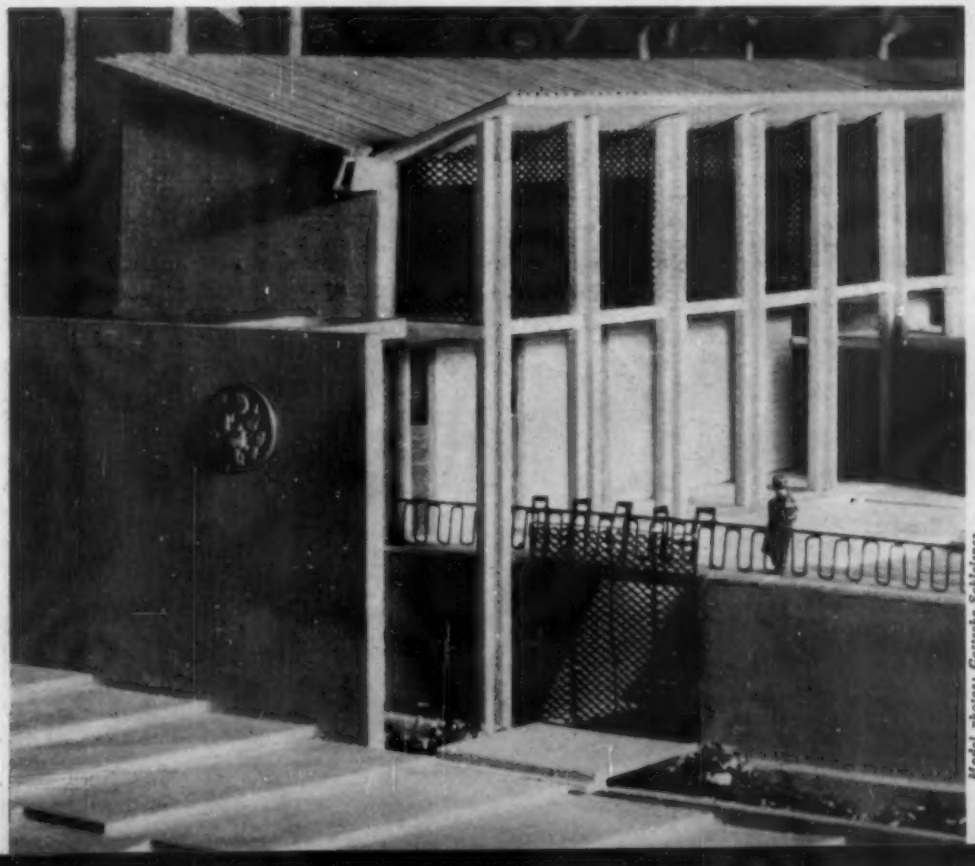
U.S. embassy buildings in Honduras

Architect Michael Hare, New York, with Associate Araldo Cossutta and Engineers Frederic E. Sutton and Henry H. Werner, has completed plans for a new U.S. embassy office building *(entrance detail below)* and ambassador's residence *(page 12)* in Tegucigalpa, capital of Honduras. From preliminary studies, the architects concluded that Latin-American building traditions should be respected as they afford many advantages in Honduras at this time. Thus, designs were developed employing such indigenous features as small wall openings, high ceilings, patios, and verandas—all these to be based on the use of readily available materials assembled by local construction methods. Though the basic design in this way respects local custom and its derivative advantages, the finished product is, through its simplicity and refinement of detail, completely expressive of contemporary U.S. architectural thinking.

Honduras is tropical, but as a result of high altitudes in the interior, relatively moderate temperatures prevail throughout the year. Accordingly, it was felt that with proper planning, mechanical ventilation would not be necessary. Building wings are one room deep and flanked by verandas and patios in order to take advantage of the prevailing breezes. Windward walls have glass jalousies.

To lend dignity to the building, local stone, available in a handsome range of



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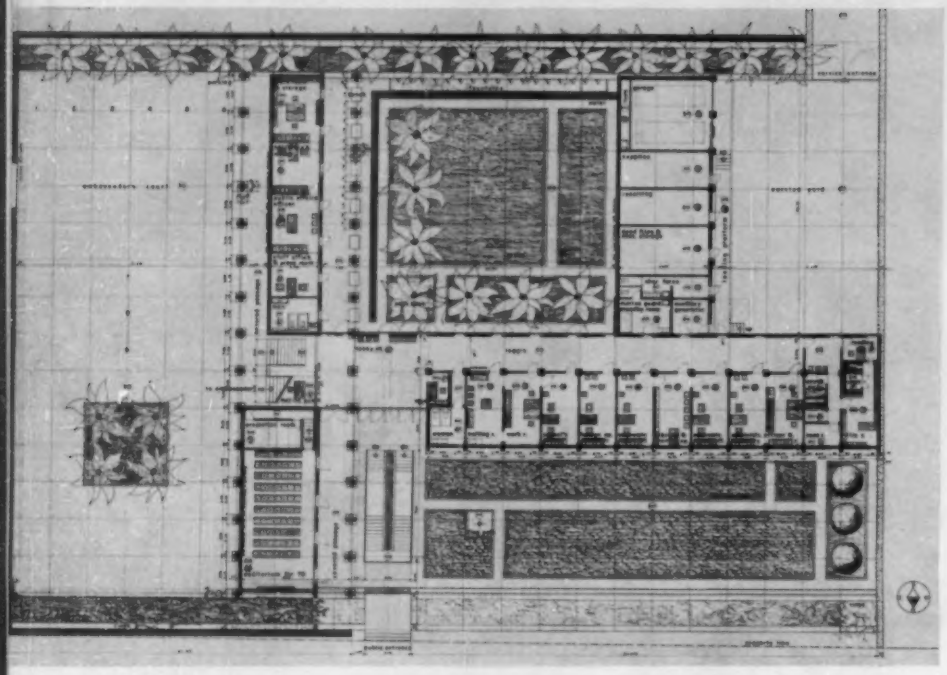
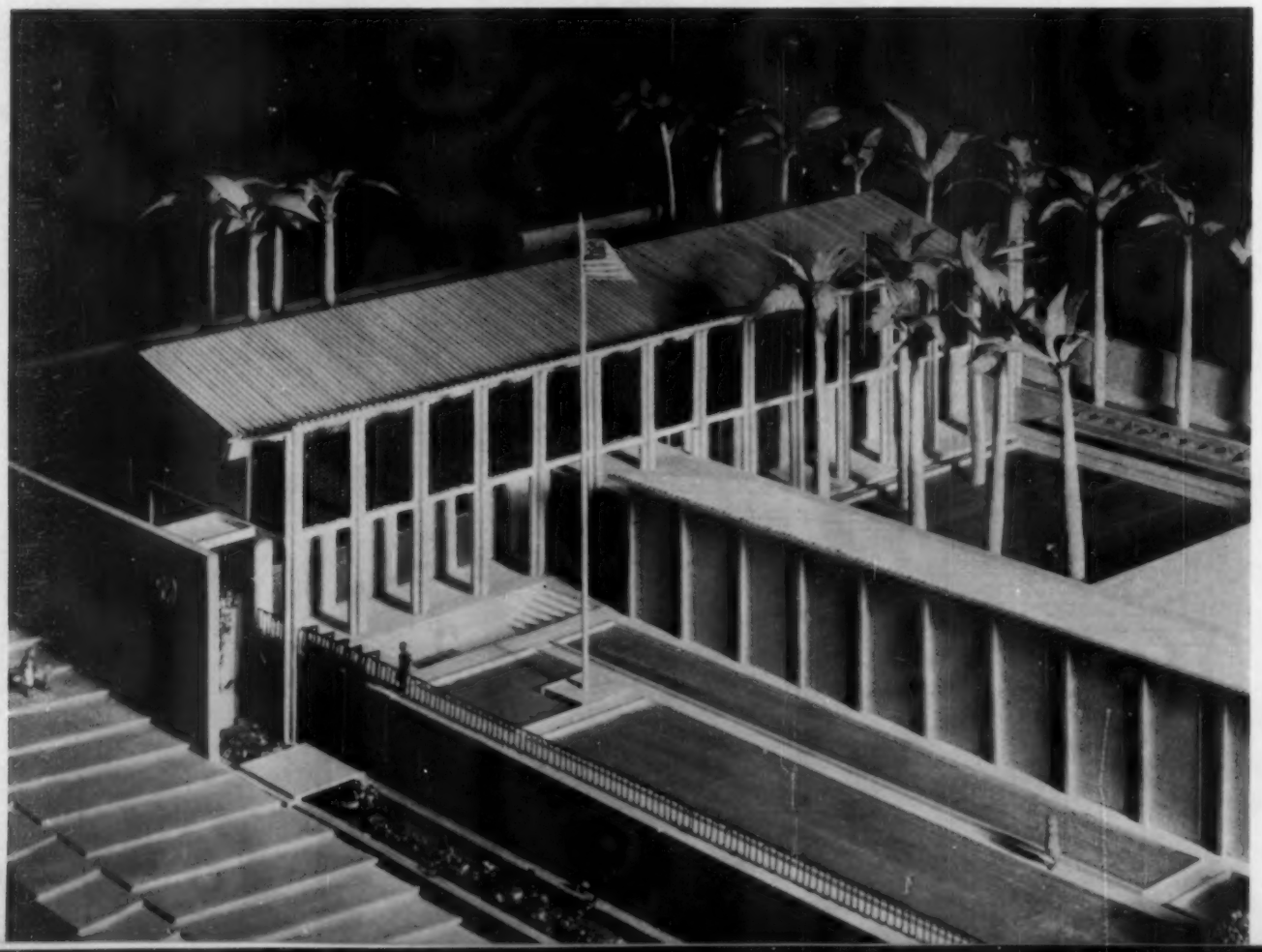


colors, was chosen in preference to brick and stucco. As stone is the structural material, spans in the two buildings are short. Small panels of Cedro Real, a wood similar to mahogany, will be used for most interior partitions. Wrought-iron screens solve security problems without closing the plan. Spanish tile was considered the most logical roofing material for the climate.

Another important design factor is the deliberate separation of the ambassador's private quarters. In the office building *(below)* the ambassador's office and related spaces are located on the second floor away from public areas. This section is also served by a separate entrance, in order to insure privacy.



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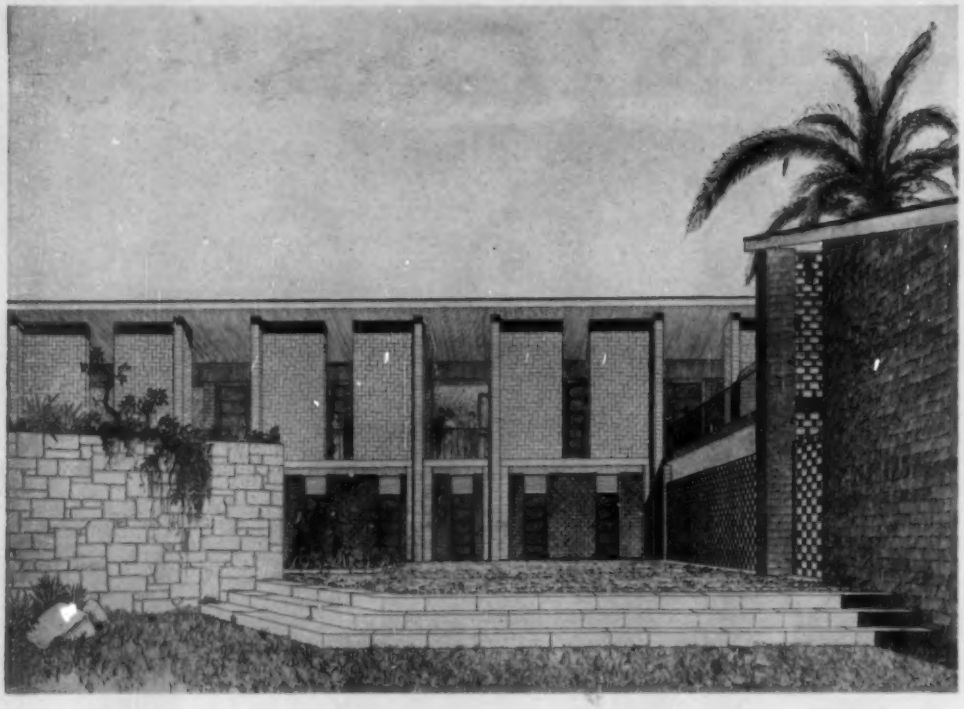
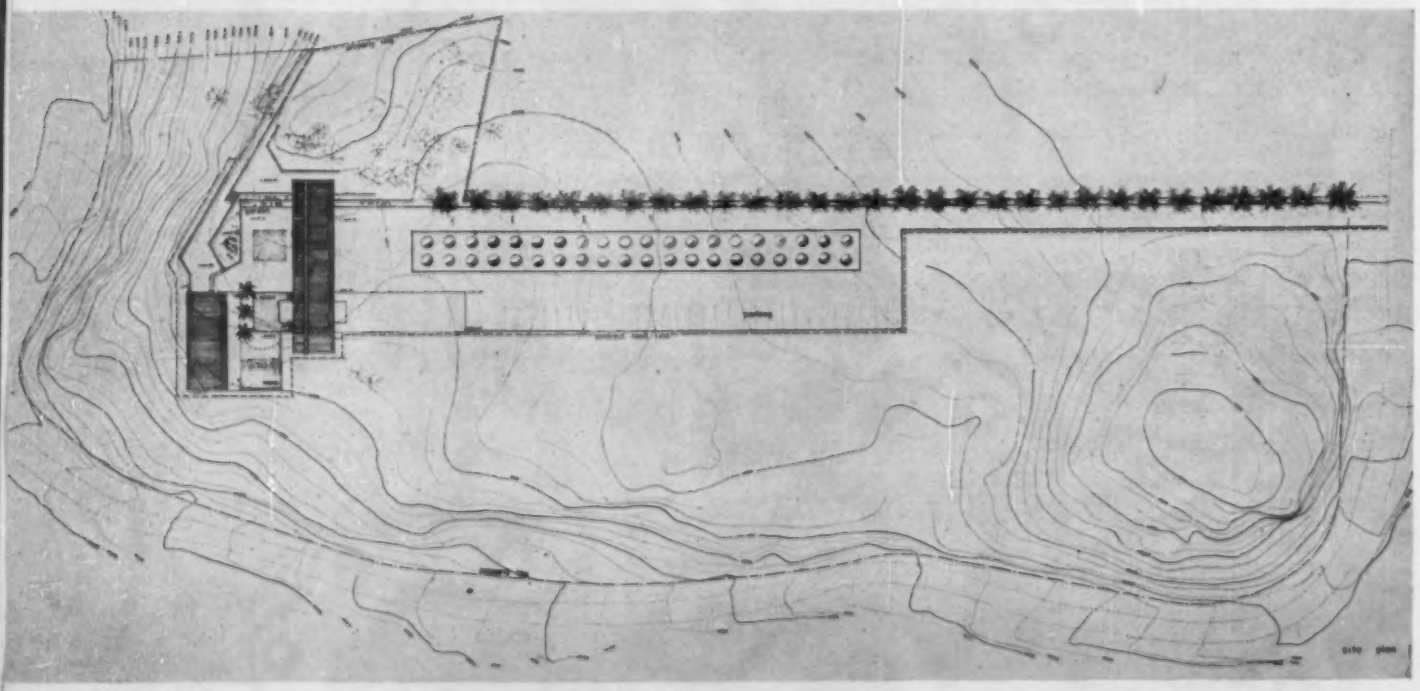


One of the principal functions of the embassy residence *(illustrated on this page)* is official entertaining. As with the office building, a separate entrance leads to private areas such as the family living patio, the ambassador's suite, bedrooms, and guest rooms. A small recreation room on the main level serves as a little theater for a limited number of guests. For large social occasions, the theater and sunken garden *(above)* will be combined with reception room, salon, state dining room, and a library on the second floor. A veranda connecting all of the state rooms extends the length of the upper floor.

Rendering: Araldo Cossutta



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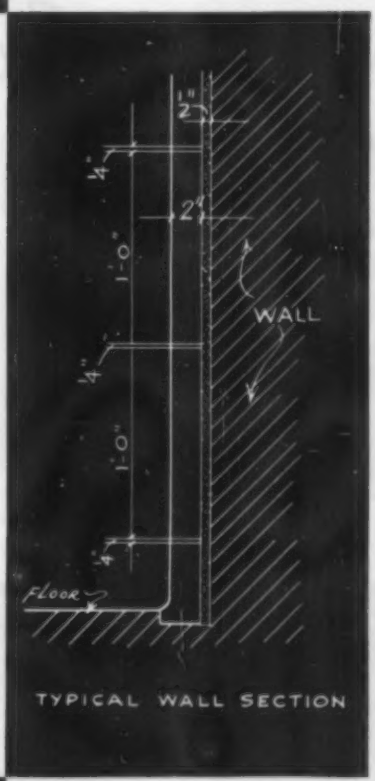

TYPICAL WALL SECTION

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F S T C

Public area in the First Federal Savings and Loan Co., Conover, N. C. Clemmer, Horton & Rudisell, architects, Robert Bush, consulting engineer.

A COMBINATION OF *Skylike* AND *Silver-dot* FOR THE ULTIMATE IN . . .

A view behind the tellers' counters with Silver-dot units over them and Skylike units over the general work area.

The general work area behind the tellers' counters. Skylike unit recessed in a Reynolds Corrugated and Perforated Aluminum ceiling.

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The even distribution of Skylike units provide glareless light over the public areas for "comfortable seeing" (top illustration). The work areas (shown on the left) have Silver-dot unit over the tellers' desks for the accent and supplementary lighting required, and Skylike units over the general work area for "easy-to-work-with" lighting.

This combination is a complete installation—that proves its effectiveness by its beauty, its economy by low initial cost, lowest current consumption and easy maintenance, and its performance by the lighting comfort it provides to workers and customers.

Here, indeed, is a typical example of Skylike installations in which functional light also becomes an integral part of architectural design.

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SKYLIKE LIGHTING, INC.
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Suggested Program for AIA Action Draws Spirited Comment—Pro and Con

Dear Editor: It seems to me that the official reaction of the AIA to the Suggested Program of Action misses the point entirely. What your group did so well was to draw from the Burdell Report the Program for the profession which is implicit in all its pages. Simply "approving" some of the Recommendations on Education and Registration, as the Board has evidently done, does not take advantage of the analysis the Report contains. That is just the beginning of the Program development that needs to be done. You have given a good push toward the next step. Congratulations!

WILTON C. KNEEDLER
New York, N. Y.

•

Dear Editor: The Program so closely follows past actions of the Board . . . that commenting on the individual items would appear unnecessary at this time.

RAYMOND S. KASTENDIECK
Regional Director, Great Lakes District

•

Dear Editor: . . . it appears to me that the Institute is and has been concerning itself with just such a Program for years. . . . G. THOMAS HARMON
Columbia, S. C.

•

Dear Editor: Most of the Program is soundly based on work being done and planned by the Institute . . . Your publication, in clearcut and analytical form of the work being done, may prove to be of great help in overcoming the inertia of the individual architect . . .

CYRIL W. TUCKER
President, Central New York Chapter

•

Dear Editor: Any Program that is interested in improving the quality of output of the profession as well as improving the movement from school through apprenticeship has my support without qualification. Congratulations on a job well done. FRANCIS KEALLY
New York, N. Y.

Dear Editor: . . . Excellent approach to the Suggested Program . . . Being one of the younger architects and a grass-roots member I feel the proposed action timely and needed. ROGER LEE
Berkeley, Calif.

•

Dear Editor: The Program is a really constructive effort to rejuvenate the AIA and to bring about reforms which are urgently needed. I congratulate you on this action which is in the interest of every architect. VICTOR GRUEN
New York, N. Y.

•

Dear Editor: Congratulations on the AIA recommendations. Confinement of discussion to the official, and quite naturally self-laudatory, press has never been enough. Nor are the Conventions and other meetings, with their limited time and attendance. Use of the pages of your magazine in the fine manner of this presentation can only benefit our organization and the profession. It is a reasonable and proper thing for a responsible private journal to do. . . .

For followers of one of the greatest callings on earth we accept too complacently our really minor position in the dynamic life of our country. We seem to measure our worth by the current general prosperity, happy conventions, and the honors we bestow on ourselves, rather than our actual contributions to society. As the only major professional group, the AIA has a large element of responsibility for this. DEWITT C. ROBINSON
Portland, Ore.

•

Dear Editor: All organizations such as ours require periodic shots in the arm, or equal: this with its imposing endorsements well could be the current ambitious injection. FRANK W. COLE
Washington, D. C.

•

Dear Editor: The propriety of publishing the Program without apparent concurrence of the Institute seemed questionable . . . CHARLES B. ALTMAN
President, The Georgia Chapter

•

Dear Editor: . . . I must admit that I was somewhat disturbed when I learned that the Executive Director of the AIA had not been consulted before this information was sent to members of the AIA . . . LEON BROWN, President
Washington Metropolitan Chapter

•

Dear Editor: . . . The Program makes recommendations that have already been accepted and carried out by the Institute. It makes others that should have careful consideration by the members through Chapters, Committees, Staff, and Officers. It seems to me that the Program would have greater strength if at its publication, P/A could have been able to note that it would also be published in the Institute *Journal* and/or *Bulletin*.

WALTER E. CAMPBELL
Chairman, Committee on Research

•

Dear Editor: . . . I do feel that we must be careful not to make ourselves annoying, but rather to prove ourselves as qualified assistants to the officials of the Institute . . . It really is my opinion, however, that [*the Suggested Program*] is well worded, and should be taken in the spirit of helpfulness . . . Perhaps you have taken this means of publishing such a Program so as to require wider attention from the architectural profession than if it were retained totally within Institute publications. VICTOR L. WULFF
President, San Diego Chapter

•

Dear Editor: . . . in my opinion there is a lot of good material in the Suggested Program. Good luck in your continued efforts on behalf of good architecture.

WILLIAM LESCAZE
New York, N. Y.

(Continued on page 16)

p/a views

(Continued from page 13)

Dear Editor: This is really excellent, and I fully concur with all of your items . . .

HENRY HILL
San Francisco, Calif.

•

Dear Editor: . . . The most important suggestion concerns the improvement of AIA publications and the employment of a Director of Publications, who should be handsomely paid for full-time services. . . . Generally, I don't think the democratic election of officers will improve the situation, I think election to Fellowship should be by seniority (to demand that Fellows be distinguished by both design and achievement and service to the profession is too much, and the present system absurd), and public relations has a nasty smell about it.

Disciplinary and judiciary rules should be completely revised . . . GEORGE HOWE
Philadelphia, Pa.

•

Dear Editor: . . . From the text of the comments and proposed resolution (on improvement of disciplinary and judiciary action) I would gather that the sponsors of the Program have not considered the fact that the Convention ratified the new form of Document 330 in June, nor would it appear that the sponsors are familiar with the actions already taken by the Board with regard to the Report of the Committee on Organization. PHILIP D. CREER
Chairman, Judiciary Committee

•

Dear Editor: . . . Program deserves support. Although the Institute has made great strides in recent years in its effort to better the position of the architect and the quality of his work, there is still much that can be done. I have reservations about one or two of the recommendations, but the Program as a whole is good. ROY F. LARSON
Chairman, Committee on Collaboration of Design Professions

•

Dear Editor: . . . Those of us who crave improvement obviously would like for it to be as prompt as possible. But I think there is real danger in undue and ill-timed impatience . . . I have the highest regard for the importance of editorial leadership, continued confidence in the power of the democratic process, a preference for decisions naturally evolved, and faith in their inevitable rightness.

NORMAN J. SCHLOSSMAN
Chicago, Ill.

•

Dear Editor: The four main objectives are certainly worthy of support, and the attendant resolutions do support them . . .

WALKER O. CAIN
New York, N. Y.

•

Dear Editor: In reading through I found much of interest. I think you have some good ideas and they are needed by AIA. From my own personal point of view, however, I cannot endorse any Program

(Continued on page 22)

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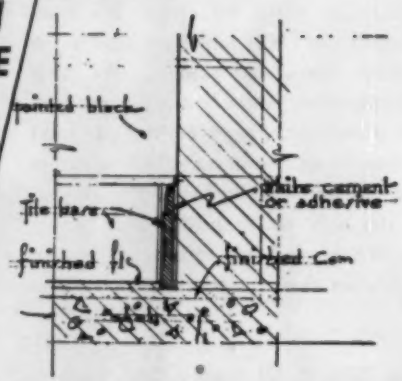

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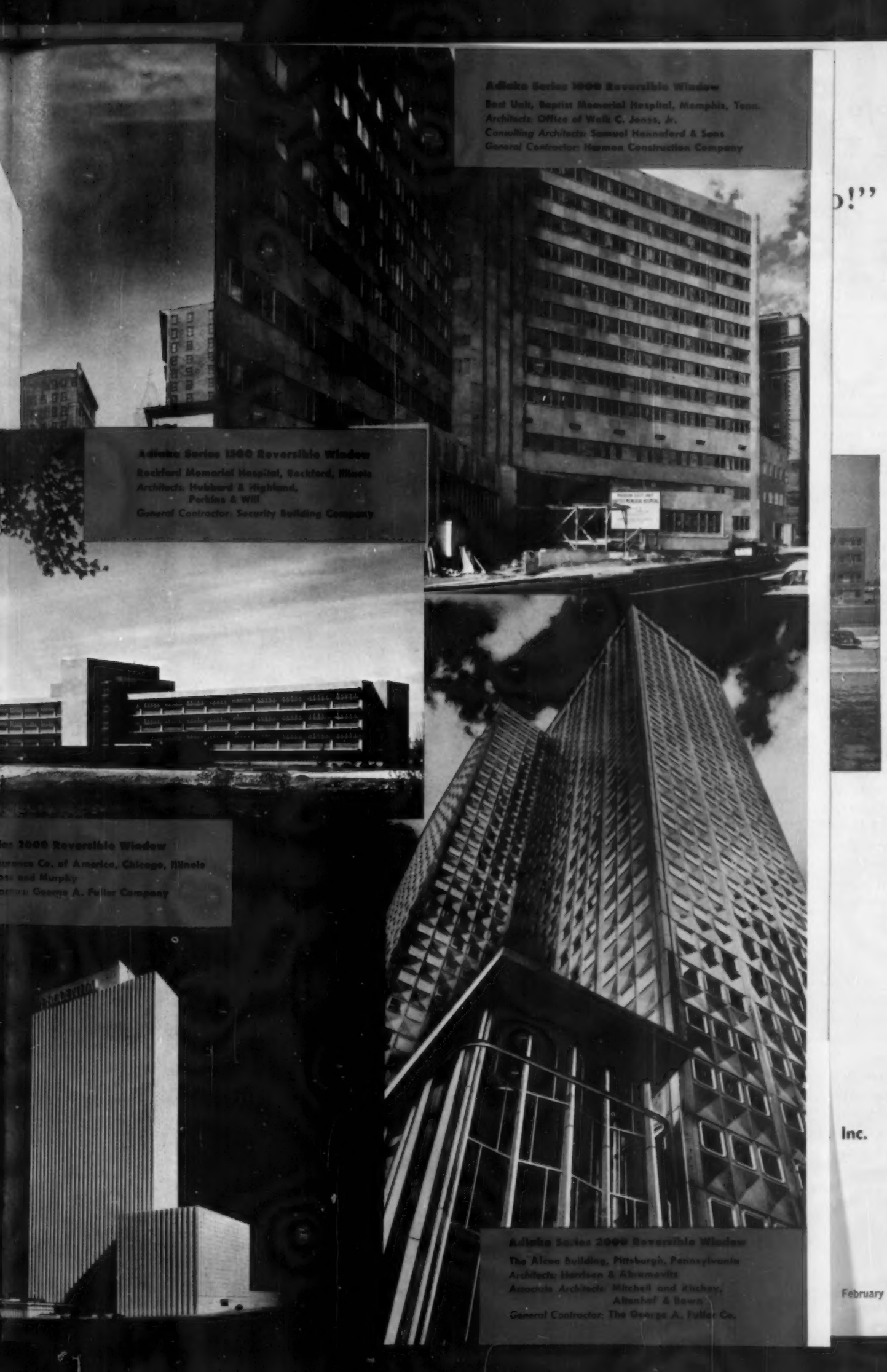

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Perkins & Will
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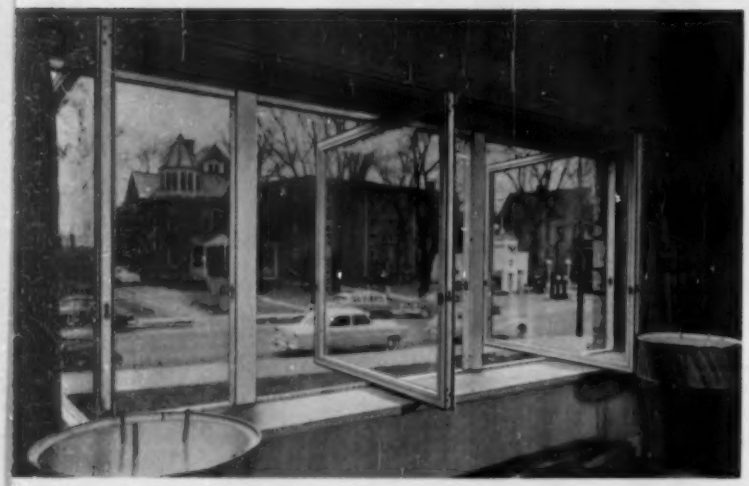

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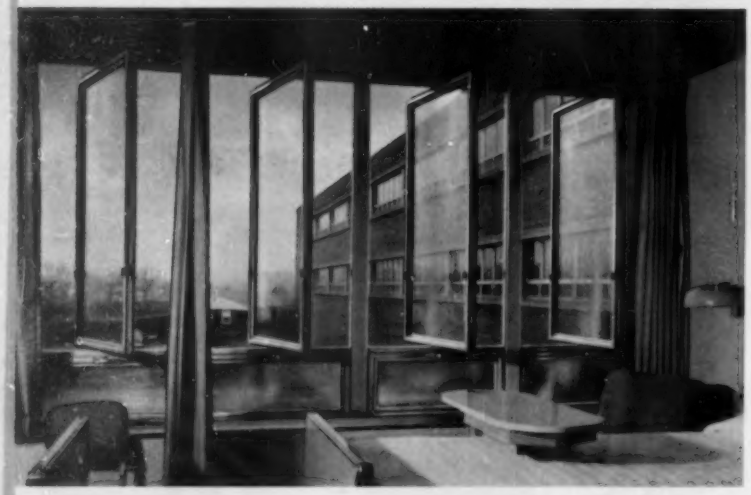

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(Continued from page 16)

which fails to have as one of its basic tenets the recognition by architects of their responsibility to design within the client's budget—and a specific program to assist and educate the architect in how to accomplish this. CHARLES LUCKMAN
Los Angeles, Calif.

•

Dear Editor: First of all, I certainly do subscribe to the over-all Program which has been put together. However . . . there are several comments I would like to make.

. . . I believe well-conceived seminars with top-flight speakers and panels would attract a good segment of the architectural profession . . . words fail me when I compare our present publications with what they ought to be . . . In my own opinion, typical standard documents are too complex.

. . . I would agree with the resolution proposing that the AIA be polled to determine its wishes regarding direct mailing of ballots for election of national officers. However, such a mail ballot might simply become a test of popularity and might not result in the selection of a man who is both willing and able to devote himself to the service of the Institute.

I believe the greatest need is for a paid Executive Secretary at the State level . . . Increased dues should be based on a percentage of fees collected by the members or firms. . . . J. ROY CARROLL
Philadelphia, Pa.

•

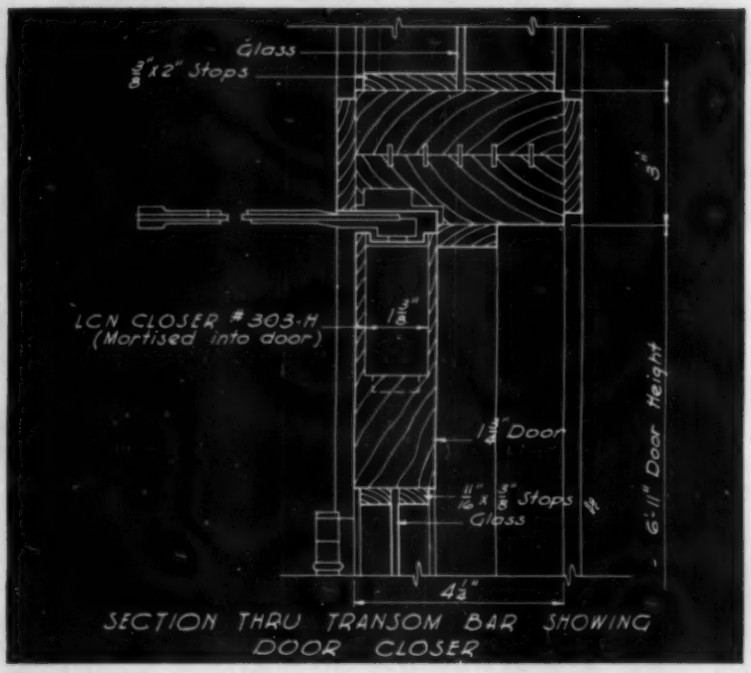
Dear Editor: The Program contains many good suggestions I think, and it stimulates interest in the AIA to give the Program such publicity. It is meaningless, however, to expect such a Program to be implemented without providing additional financial support for the AIA . . . Lowering dues for individuals by assessing fees against commissions when they exist, it seems to me, would raise more money for the AIA and would make it more attractive for people to join. WILLIAM F. R. BALLARD
New York, N. Y.

likes speculations

Dear Editor: I rather like to read speculative articles such as the one on "Style and Materials" by Sibyl Moholy-Nagy (October 1954 P/A). I don't always understand them and sometimes wish they were a little more convincing. Mrs. Moholy-Nagy's essay is provocative. It is jammed with ideas. It tries hard to characterize a new direction in architecture, which she names the "Reciprocal Style."

Like many another architect, I am eager to understand such speculations. I

(Continued on page 24)



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Construction Details on Opposite Page

(Continued from page 22)

must confess to a personal dissatisfaction with my own point of view and with my inability to accept completely current trends. Mrs. Moholy-Nagy's effort does not clear up the past for me nor point a way to the future. I find her separation of two developments in architecture, one a "Structural" and the other an "Applied" style misleading. Her "Reciprocal Style," by which I assume she means an interplay of structure and design, seems to be an ambiguous restatement of the very old notion that a work of art synthesizes matter and form.

I take it that architecture as a "balanced relationship of purpose, material, and form, visibly interpreted through the excellence of the architect" is meant to be Mrs. Moholy-Nagy's answer as to what architecture should be. Such a definition is not intrinsically opposed to Frank Lloyd Wright's characterization of architecture as "spirit in objectified form . . . embodied in materials."

Aristotle said that the forms of art lie in the soul of the artist. Aquinas observed that the idea of a house pre-exists in the artificer's mind. Alberti said a building consists of design and of matter, "the first produced by thought, the second by nature." He separated style and material, to use Mrs. Moholy-Nagy's parallels to design and matter, by remarking that the "whole art of architecture consists in design and structure."

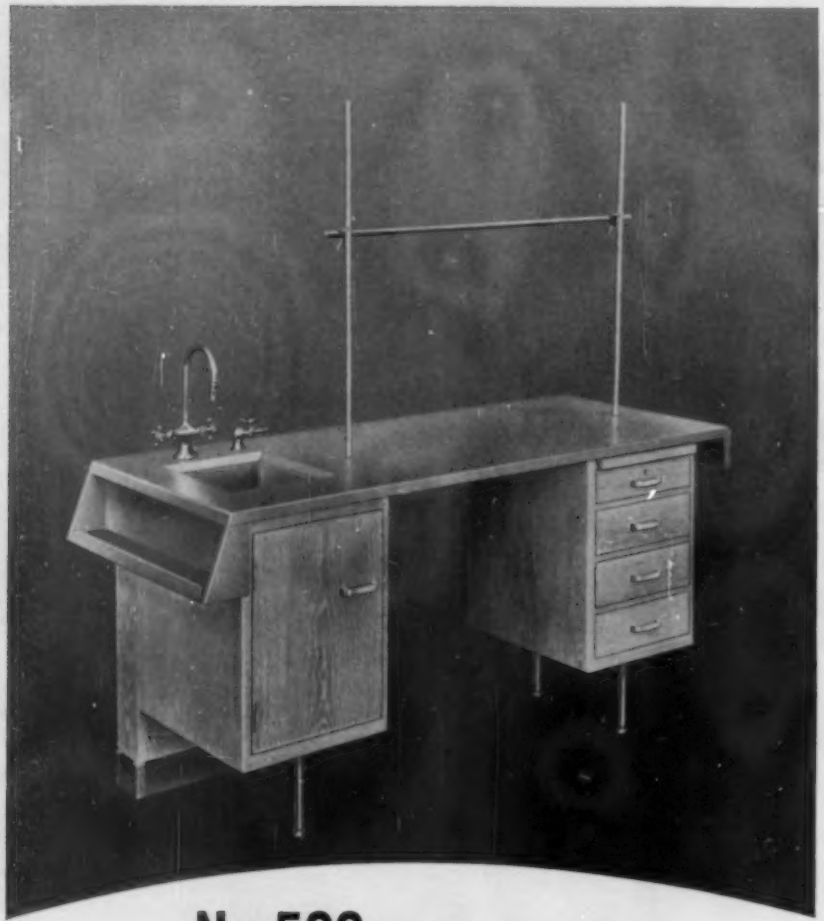
Nobody would put Aristotle's or Alberti's notions about architecture in the same boat with Mrs. Moholy-Nagy's. She ascribes to material something else again than, say, Aristotle's notion of primordial matter; and when she speaks of an antithesis between a structural and an applied style she proposes a kind of dualism which Alberti never dreamed of.

By itself, the division of architectural development into Structural and Applied style is an unfruitful kind of dualism. Using this bed, Mrs. Moholy-Nagy is unable to find a place for Egyptian or Mesopotamian architecture: they simply cease to exist. She says, "from this aspect, architectural style . . . starts with Greece." It is hard to find a "collective ideal" in Rome, let alone to identify it with a "Structural Style," and so on.

There are so many overlapping criteria and points of view in Mrs. Moholy-Nagy's article that it is almost impossible to nail down any one set of ideas and work from it. I take it that she means by "Structural Style" one that strives for the communal and the intellectual, as against the "Applied Style" which is individual and emotional rather than communal. However, if this distinction is accepted, then the historical divisions as put forward by Mrs. Moholy-Nagy would have to be restated.

The positive feature of her essay is its search for new definitions. I, for one, would like immensely to discover a new direction and feel sure that I am walking on the right road, but I feel that Mrs. Moholy-Nagy's article simply confuses the way.

MILTON KIRCHMAN
New York, N.Y.



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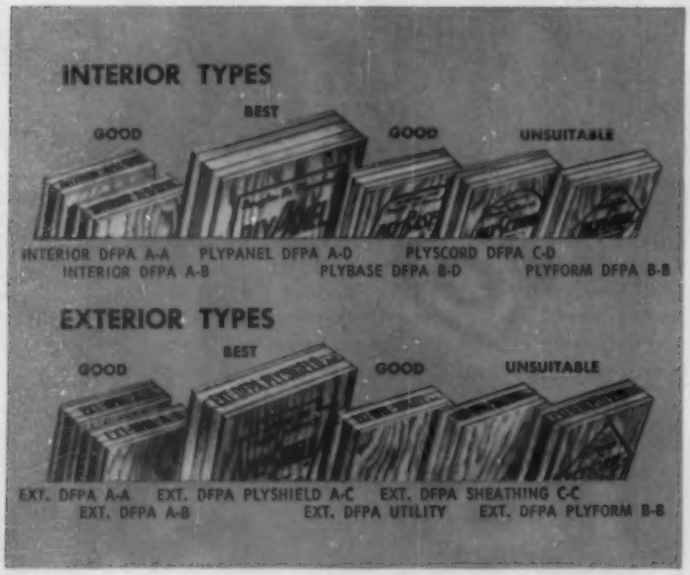
Satisfactory resilient flooring installations often depend on . . .

SELECTING THE RIGHT TYPE OF UNDERLAYMENT

Resilient flooring materials all tend to mold themselves somewhat to irregularities of the surface over which they are installed. This tendency, in addition to the more or less severe seasonal expansion and contraction of subfloors, makes it extremely important that architects be familiar with the right underlayment for various conditions and that they insist upon its correct installation. Otherwise, the resilient finish floor may lose some of its attractive appearance because of an uneven subfloor or even be split by subfloor movement.

There are two main types of subfloors to be considered: concrete (or other monolithic floors, such as terrazzo, ceramic tile, or steel) and wood—and two main types of underlayments: board and mastic. If the subfloor is concrete, and an underlayment is needed, a mastic-type compound should be used. Wooden subfloors call for either board or mastic-type underlayments, depending on their type and condition. Mastic-type underlayments are generally used to *level* wood floors—not to smooth them.



Mastic-Type Underlayments. Mastic underlayments are of two kinds—those which use a binder such as asphalt or latex in the mix and those which consist simply of a powdered mixture such as cement, gypsum, and sand, to which only water is added. For some installations, either type will be satisfactory. Generally, however, only the binder-type mastics are suitable for the thin applications needed for underlayment work. The powdery floor fills all too often break down under traffic when applied in thin coats. Of the binder-type mastics, the latex type has proved superior for application in "skin" coats, of ⅛" or less thickness. In heavier applications the asphalt type of mastic is usually preferred for its lower cost.

Armstrong Flormastic* is an asphaltic compound which, when mixed with Lumnite cement and aggregates, is both inexpensive and satisfactory under any normal conditions, including installations over radiant-heated subfloors. However, Flormastic should not be used when the resilient flooring is to be installed with No. S-104 Chemical-Set Waterproof Cement.

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Joint spacing of approximately 1/16" is left between sheets of hardboard underlayment to allow for slight expansion and contraction with varying moisture conditions. The hardboard sheets should be laid with joints staggered, ashlar fashion.

Hardboard or plywood underlayment should be firmly nailed to the underfloor with coated or ferrule-ring nails. Nails must be placed not over six inches on center in all directions and at all edges and driven flush with the underlayment.

Armstrong No. S-105 Chemical-Set Underlayment Cement is recommended for use with this adhesive and for thin applications and "featheredging."

It is important to remember that the subfloor must be free from surface treatments such as paint, oil, and varnish before any mastic-type underlayment is applied.

Board-Type Underlayments. The basic choice here is between hardboard and plywood. Most architects have found it satisfactory to specify hardboard on remodeling work and plywood on new construction. The main reason for this is that the thinner hardboard type of underlayment avoids excessive building up of old subfloors. In new construction, on the other hand, it is often desirable to build up subfloors.

Hardboard. Hardboards such as Armstrong Temboard® Underlayment which have one smooth and one "wire" side are recommended in Armstrong specifications. This type of hardboard has been in use for over 25 years and has proved to be most satisfactory. Tempered hardboards should never be specified as underlayments, because they tend to buckle when subjected to moisture, are difficult to nail, and are more expensive than the recommended types. Those having two "smooth" sides do not provide so good a surface for adhesion as Temboard Underlayment.

Plywood. This material has been used satisfactorily as an underlayment for many years. The general term "plywood," however, should always be qualified in underlayment specifications. Only eight of the twelve types of plywood available are suitable as underlayment. Among interior plywoods, grades such as AD, AB, AA, and BD are recommended, with AD preferred because it provides one perfect face, yet is economical. Grades CD and BB should not be used.

Among exterior plywoods, grades AA, AB, AC, and BC are recommended, with AC preferred on balance between cost and performance. CC and BB should not be used. A ⅜" or greater thickness should be used in all cases. (See chart.) As a general rule, interior plywoods are used because of lower cost. Exterior plywoods are recommended wherever excessive water spillage occurs, such as around soda fountains, at the entrances of public buildings, and on counter tops.

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All these conditions and many more influence the type of drain to be selected for the particular location. One method that is helpful in determining the proper type of floor drain is to use a check-list of drain features such as is shown at the right. This list shows the great variety of features available in Josam drains and illustrates those features in the drains on the next page.

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☐ NON-CLOG TRIPLE DRAINAGE	See No. 2, 8
☐ OUTLETS	See No. 14
☐ MATERIALS AND FINISHES	See No. 13
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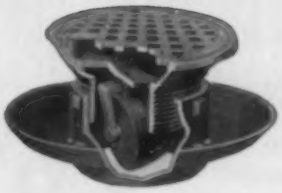

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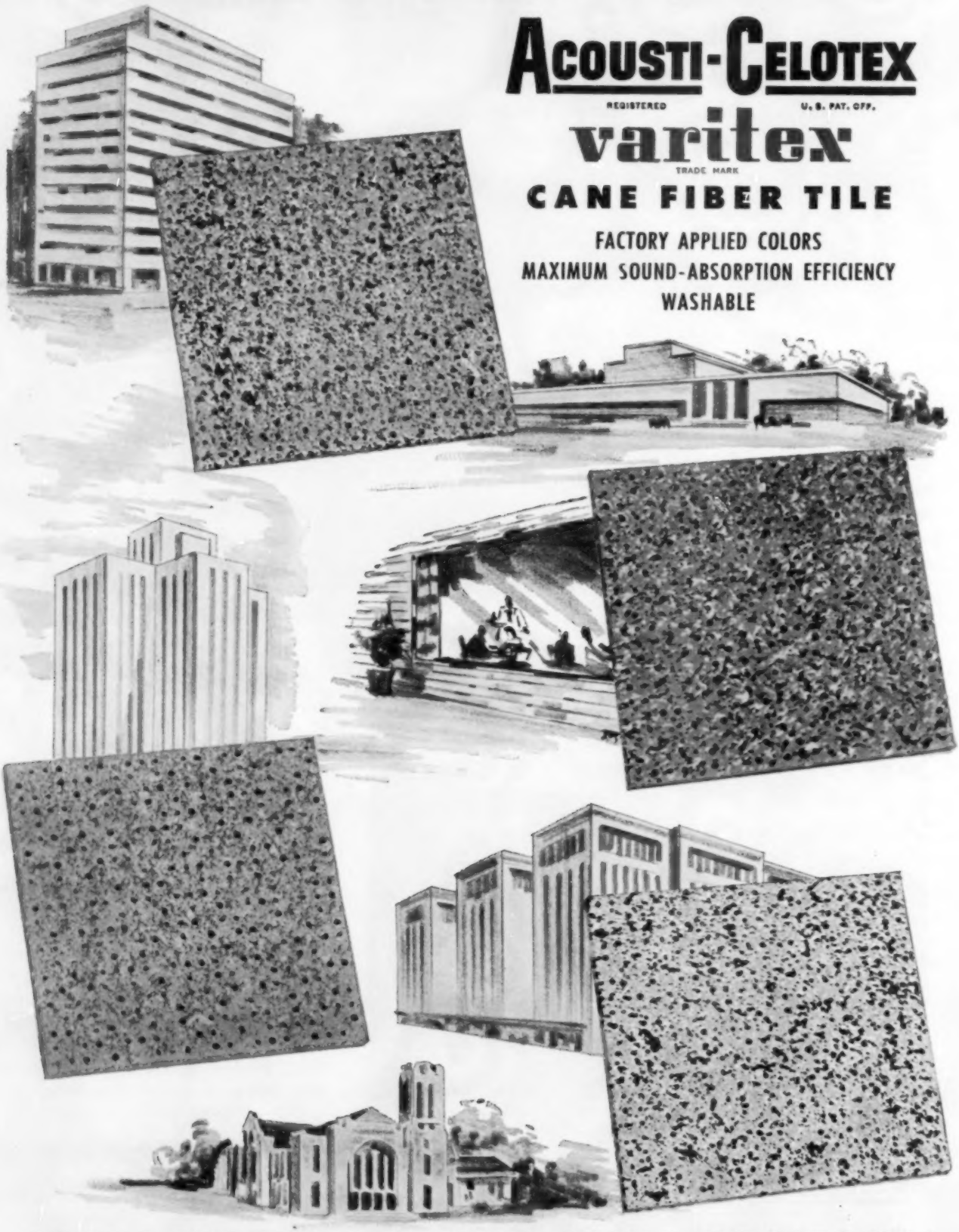

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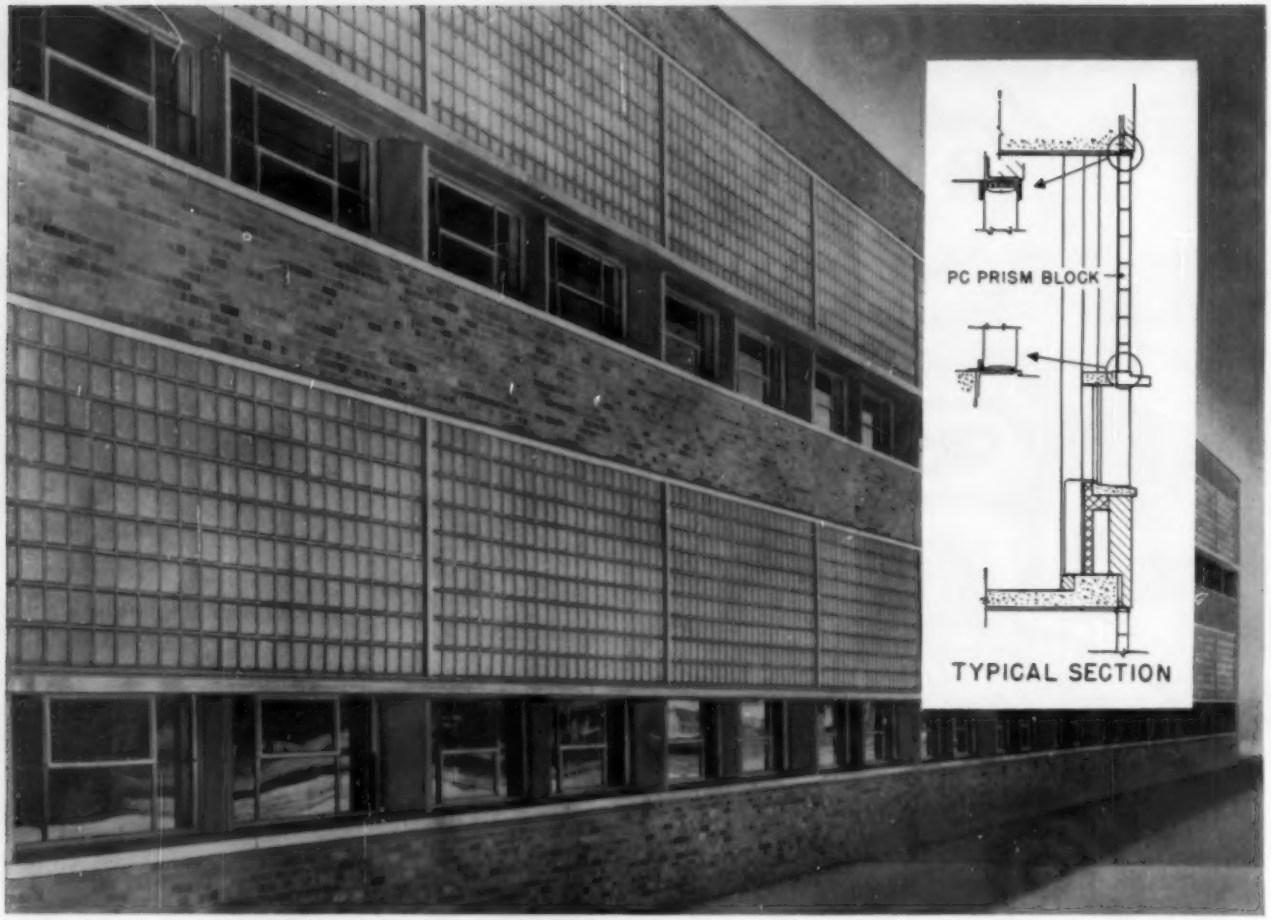

Edward Everett Elementary School, Detroit, Mich.

Architect: Giffels & Vallet, Inc., L. Rossetti, Associated Engineers and Architects, Detroit.

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Any building material, improperly used, can create a dull and uninspired result, whether it be brick, stone or glass blocks. The essential ingredient in any design is the imagination of the architect. And, in the case of glass blocks, this need be the *only* limiting factor.

You don't have to protect a glass block panel against sunlight and the weather—and thereby spoil the function and appearance. You don't have to clutter the facade with overhangs – functional glass blocks have built in daylighting control. Your client will not be concerned with maintenance problems—glass blocks require no maintenance.

The school building in the picture is an interesting example of imaginative design. Notice the neat flush panels of PC Glass Blocks. Then notice the deeply recessed vision strips that are self-shading for high sun angles. The total effect is striking!

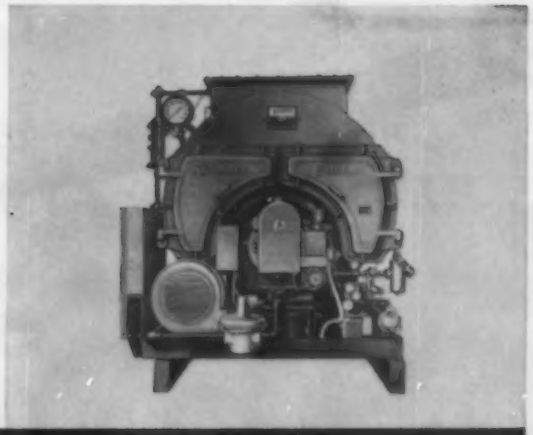
In the last few years, the PC Glass Block line has been expanded until you can now choose a block for every conceivable application. You can think in terms of the new 12″ blocks, the new Skytrol Blocks for toplighting, or the new Suntrol Blocks for high brightness areas. The product is here. Why not think seriously about it when planning your next new building? See our catalog in Sweet's or write Pittsburgh Corning Corporation, Dept. AC-25, One Gateway Center, Pittsburgh 22, Pa.

PC Glass Blocks

PITTSBURGH PC CORNING ®

ALSO SKYTROL® AND FOAMGLAS®

3 winning combinations



KEWANEE-IRON FIREMAN BOILER-BURNER UNIT

KEWANEE-RAY BOILER-BURNER UNIT

KEWANEE-PETRO BOILER-BURNER UNIT

Planned as perfectly integrated units—combined for the highest in efficient performance—these 3 matched Boiler-Burner Units represent the merged knowledge, experience and judgment of experts in both boiler and burner fields. Here, truly, are 3 of the finest Boiler-Burner Units for high or low pressure heating—power and process steam—oil, gas, or oil-gas combinations. You can be sure of dependable performance from a ...

KEWANEE

reserve + plus rated

Boiler

You can be sure of lower operating cost and higher efficiency. Reserve Plus Rating certifies that 50% or more power is built in to provide for piping, pickup and additional capacity requirements. It means "cruising speed" operation with extra reserve power to take care of emergencies. It means ratings based on nominal capacity, not maximum capacity.

8.2 **SQUARE FEET OF HEATING SURFACE PER BOILER HORSEPOWER . . . IN STRICT ACCORDANCE WITH THE PROVED CODE OF THE STEEL BOILER INSTITUTE—80% CERTIFIED EFFICIENCY.**

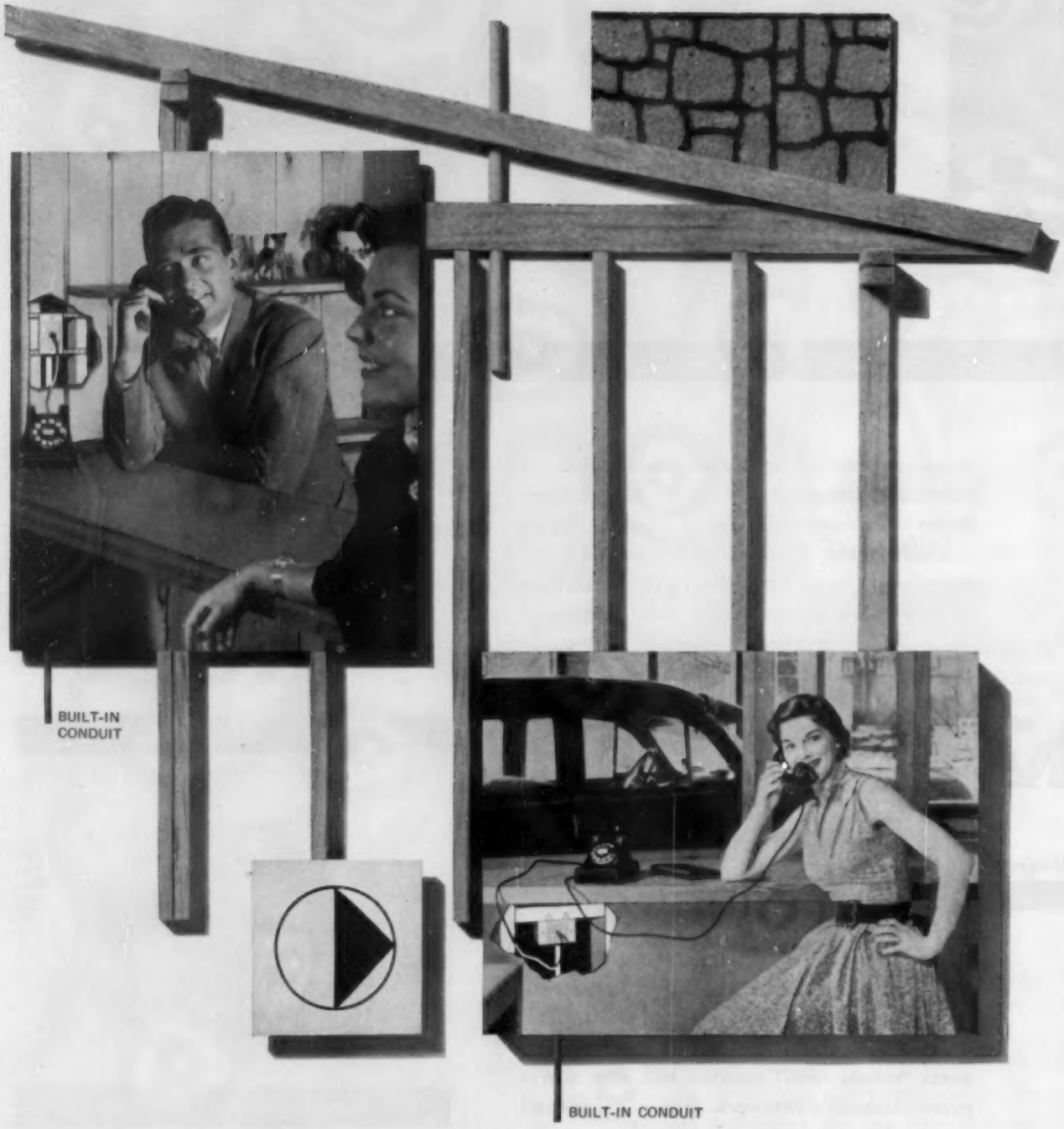
KEWANEE BOILERS

KEWANEE-ROSS CORPORATION, Kewanee, Illinois

Division of American Radiator & Standard Sanitary Corporation

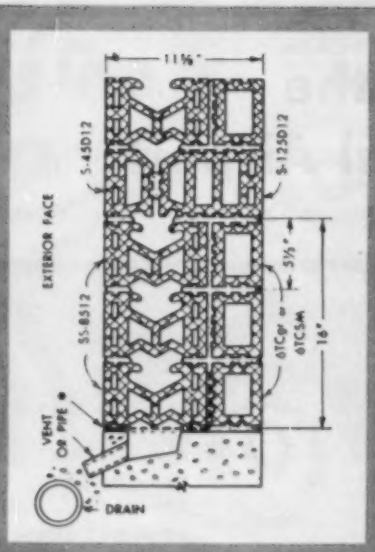
Serving home and industry - American-Standard - American Blower Church Seats & Wall Tile - Detroit Controls - Kewanee Boilers Ross Exchangers - Sunbeam Air Conditioners

YOU can depend on KEWANEE engineering



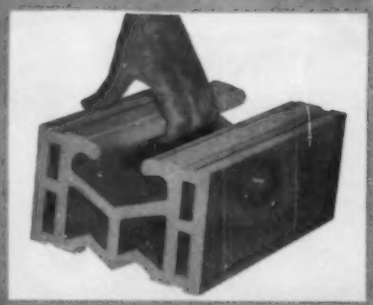
Providing for enough telephone outlets in the right locations is good long-range planning. It means your clients will always have the telephone service they want where they want it—with telephone wires concealed.

Your Bell telephone company will be glad to help you work out economical conduit installations. Just call your nearest business office. **BELL TELEPHONE SYSTEM**



SECTION OF 12-INCH WALL OF NATCO DRI-SPEEDWALL TILE

* Weep holes required on approximate 3' centers unless drainage pipes or vents are provided.



SPEED HANDLE PERMITS EASY HANDLING

Insure Strong, Dry Walls with

NATCO *Dri-Speedwall* TILE

CAPTIVE AIR SPACES

Walls are insulated against rapid changes in temperature. Completed buildings are cool in summer and warm in winter.

NON-THRU MORTAR JOINTS

Widely separated mortar joints very effectively resist moisture penetration through the wall.

WIDE DOUBLE SHELLS

Strong, secure mortar joints are assured, together with ample bearing, plus minimum wastage of mortar.

SMOOTH BUILT-IN HANDLE

Permits quick and easy handling—prevents cuts and abrasions to the mason's hands, so common in laying other materials. One hand for the tile—the other for the trowel. This results in more efficiency and greater economies in erection.

DRY WALL FEATURE

The Natco Dry-Wall feature consists of a series of interior troughs in which any small amount of moisture, that may penetrate through the exterior mortar joints, is directed to the open "V-type" channels. There it runs off through weep holes to the outside of the foundation wall instead of going through to the interior surface of the wall.

Typical buildings constructed with walls of NATCO Modular Unglazed *Dri-Speedwall* TILE

Colgate-Palmolive Building, Jeffersonville, Ind.
Architects and Engineers: Albert Kahn Associated Architects & Engineers, Inc., Detroit, Mich.

Rochester Gas & Electric Corporation Plant, Rochester, N. Y., Architects and Engineers: Gilbert Associates, Inc., Reading, Pa.

Schneider Textile Mills, Taylorsville, N. C.
Architects and Engineers: Biberstein & Bowles, Charlotte, N.C.

FURNISHED IN 3 POPULAR FINISHES

- Manganese Spot
- Buff Unglazed
- Salt Glazed

NATCO DRI-SPEEDWALL TILE is highly resistant to moisture and thoroughly fireproof. It's termite and vermin proof and cannot rot or decay. Assures greater load-bearing strength plus utmost resistance to lateral as well as vertical pressures. Never needs painting or repairs . . . stays free from shrinking and cracking. Especially designed for industrial, commercial, and multiple housing construction. Ideal in appearance and practical—wherever low cost and speedy erection are important factors. Write us today for more specific data on your particular job.

17 Strategically Located Clay Plants

NATCO CORPORATION

NATCO CLAY PRODUCTS SINCE-1889

327 Fifth Avenue, Pittsburgh 22, Pa.

a pilot's eye view of the San Francisco International Airport

Basic Plan by Public Utilities Commission, City & County Of San Francisco — *Design by Wm. P. Day, Architect-Engineer*

100,000 square feet of colorful and permanent SEAPORCLAD porcelain panels

An airport has to stay modern looking through the years! That's why the San Francisco Airport selected SEAPORCLAD for its piers and concourses as well as for its air mail and cargo building. These panels harmonize and enhance every other material used in the design of the airport and the cost of maintenance is practically nil!

Construction: Seaporclad-Seaporcel Porcelain Face Skin, Galvanized Back Skin, Hot Plate Press Laminated to Aluminum Honeycomb Core.
Size: Panels—Principally 2'-9" wide x 5'-10" high x ¾" thick.
Waterproofing: Flashing Flanges and Mastic in ⅛" Joints.
Color: Buff, Semi-Matte, Terra Cotta Texture.

For Some Job... Somewhere... You Can Use SEAPORCEL*

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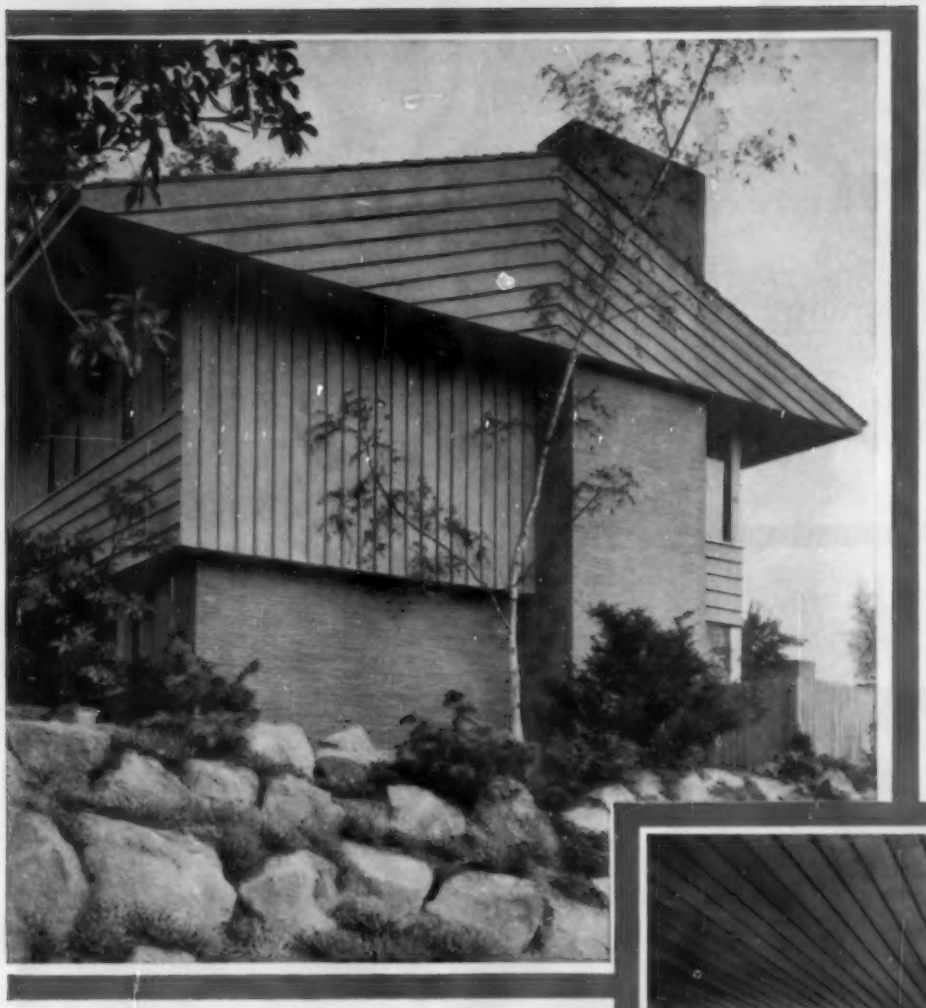
Member: Porcelain Enamel Institute

A. F. OF L. METAL FABRICATING & ENAMELING PLANT

*Reg. U.S. Pat. Off.

COMPLETE ENGINEERING & ERECTION DEPARTMENTS



EXTERIOR: A Seattle architect designed standard sizes of Western Red Cedar Siding into the harmonious pattern at left.

INTERIOR: An atmosphere of quiet relaxation is given the room below with a soft-spoken ceiling of Western Red Cedar Siding.

interesting uses for *WESTERN RED CEDAR* beveled siding

Design fascinating variety into homes with this finest of all building materials! The graceful shadow lines of Western Red Cedar Siding give a pleasing and distinctive pattern.

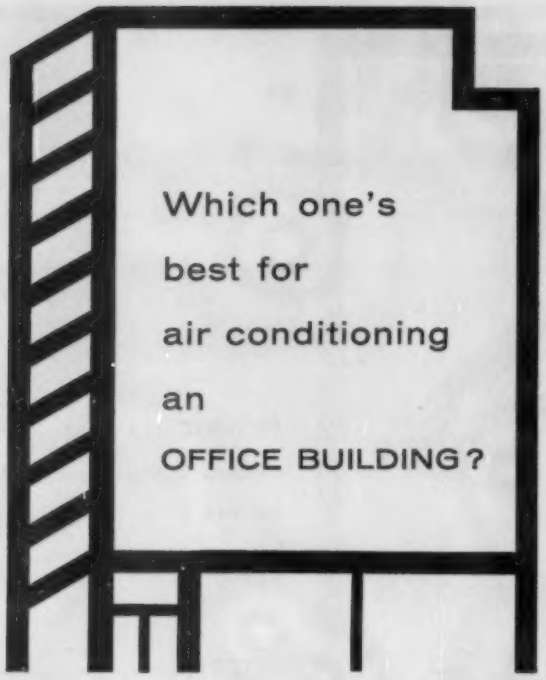
Western Red Cedar Siding is produced in six sizes and four grades. It is light and easy to work. It seldom splits, shrinks or warps. Home owners profit from greater insulation value, more durability and ease of colorful decoration.

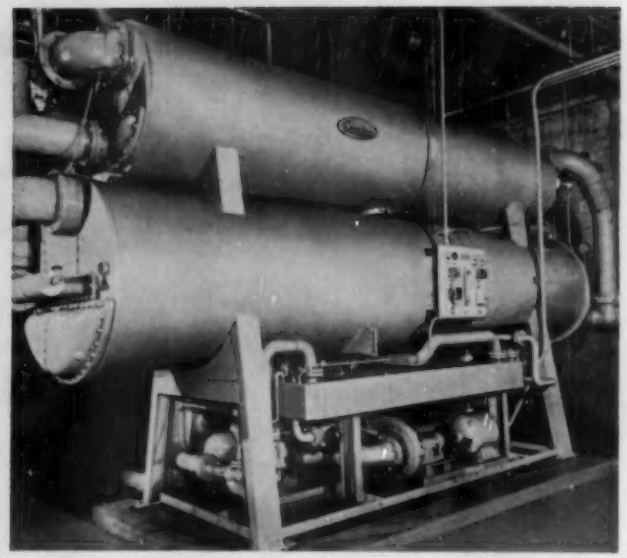
Specify naturally beautiful Western Red Cedar Siding with its superior qualities. For other suggestions on new uses and technical information, *write Dept. 102, 4403 White-Henry-Stuart Building, Seattle 1, Washington.*

WESTERN RED CEDAR LUMBER ASSOCIATION

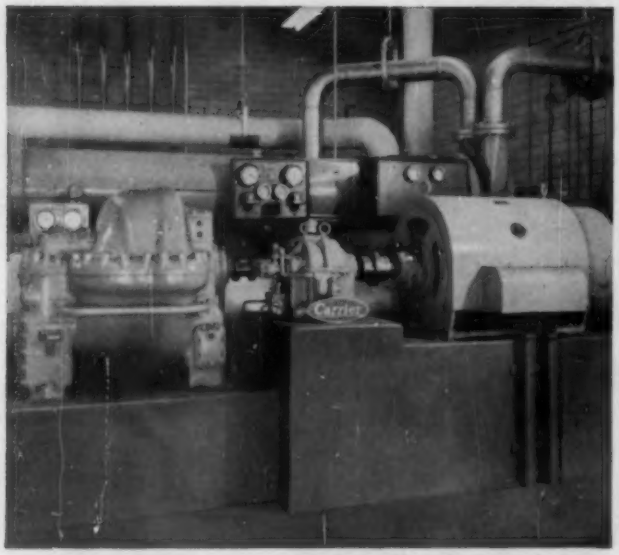
4403 White-Henry-Stuart Bldg., Seattle 1, Washington

Members: ALASKA PINE & CELLULOSE SALES, LTD., Vancouver, B. C.; ALOHA LUMBER CORPORATION, Seattle 11, Washington; BRITISH COLUMBIA FOREST PRODUCTS, LTD., Vancouver, B. C.; BRITISH COLUMBIA MFG. CO., LTD., New Westminster, B. C.; COLUMBIA VALLEY LUMBER COMPANY, Bellingham, Washington; FLAVELLE CEDAR LIMITED, Port Moody, B. C.; WILLIAM HULBERT MILL COMPANY, Everett, Washington; MacMILLAN & BLOEDEL, LTD., Vancouver, B. C.; McDONALD CEDAR PRODUCTS, LTD., Fort Langley, B. C.; E. C. MILLER CEDAR LUMBER COMPANY, Aberdeen, Washington; NALOS LUMBER, LTD., Vancouver 3, B. C.; NORWOOD LUMBER COMPANY, LTD., Vancouver, B. C.; NORTHWESTERN LUMBER & MFG. COMPANY, Everett, Washington; PACIFIC TIMBER COMPANY, Everett, Washington; SEATTLE CEDAR LUMBER MFG. COMPANY, Seattle 7, Wash.; WEYERHAEUSER TIMBER COMPANY, Tacoma 1, Washington.

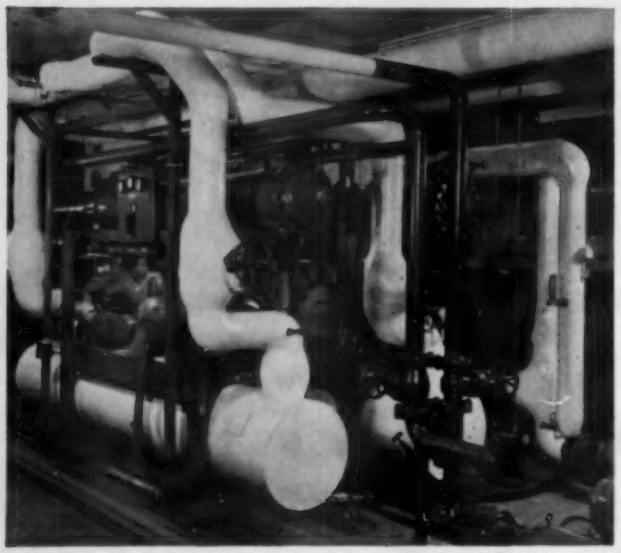




Carrier Absorption Machine is ideal for refrigeration where steam is available. Using plain water as the refrigerant, it cools with low-pressure waste steam or steam from idle boiler capacity. Absence of noise and vibration, and compact, lightweight design permit installation on roof or intermediate floor.



Carrier Centrifugal Refrigerating Machine is particularly well suited to handle cooling load requirements of large buildings. Round-the-clock dependability has been proved in hundreds of air conditioning applications throughout the world. Compact machines use electric motor or steam turbine drive.



Carrier Reciprocating Water Cooling Machine provides economical refrigeration for smaller tonnage installations. Rugged and compact, it is a complete refrigeration cycle in a single unit, wired, piped and refrigerant-tested at the factory. Mounted in rigid structural steel frame for easy installation.

Carrier is the quickest way to the right answer

JUST 1–2 AND THE JOB IS THROUGH!

Carrier has *all* the ways to air condition *any* job—and all Carrier equipment is engineered to the same uniform standard. So short-cut hours of selection by (1) using the Carrier line as your shopping guide and then (2) comparing values.

For more information about Carrier products, call your nearest Carrier office. Or write direct to Carrier Corporation, Syracuse, New York.

Carrier air conditioning · refrigeration · industrial heating

TERRACES

GARAGES

Color FOR CONCRETE FLOORS...

GREATER HARDNESS, TOO!

WITH TRUSCON

ART-ROC AGGREGATE

PORCHES

RESTAURANTS*

BUILT-IN COLOR! Yes, built right into the concrete, forming an integral part of it, giving you a beautifully colored floor . . . rather than plain, drab concrete. Both colors, Tile Red and Spanish Green, have depth and brilliance. Each Art-Roc color offers its own pleasing effect—Tile Red radiates warmth—Spanish Green provides a soothing, cooling motif.

BUILT-IN HARDNESS! Concrete floors protected with Art-Roc are actually twice as hard as iron, can last up to twice as long as ordinary concrete. Art-Roc floors resist many cleansers, alkalis and rust . . . as well as *physical* abuse.

BUILT-IN PLEASURE! Color pleases. Color sells. Color makes *everyone* react favorably . . . provides tremendous contrast to lackluster, plain, neutral surfaces.

AND SINCE ART-ROC is so low in cost—and so easy to apply—it's a real pleasure to *use*, as well as to behold!

*Also used in walks, driveways, salesrooms, factories, laundries and all types of institutions, commercial buildings and residences.

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Division of Devoe & Raynolds Co., Inc.,

Truscon Laboratories
Box 69, Milwaukee Junc. P.O., Dept. P
Detroit 11, Michigan

Rush complete Art-Roc data and specifications to:

Name_____

Address_____

City_____ Zone____ State_____

☐ *I am an architect* ☐ *Not an architect*

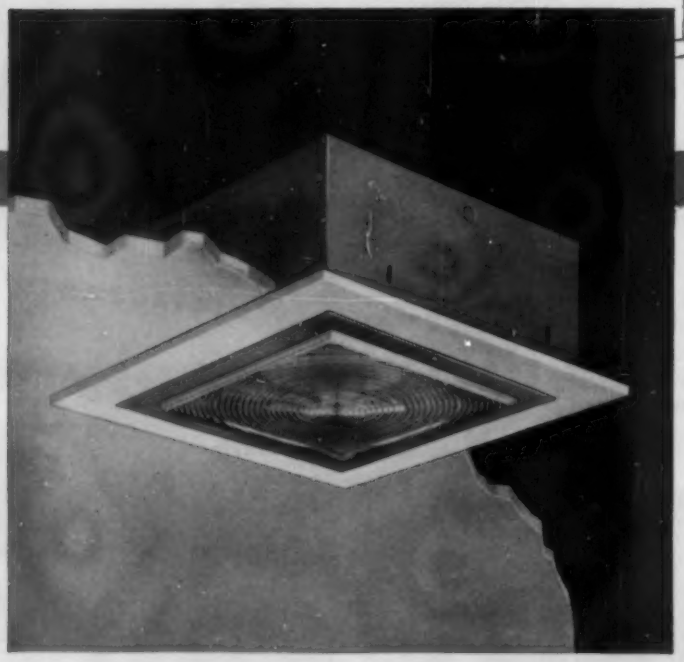
true color SELLS MERCHANDISE

Clear, prismatic Amcolens with its high light transmission in ELIPTISQUARE allows merchandise to reflect true color values—providing the color accent that does a dynamic selling job.

ELIPTISQUARE supplies the general area lighting and ELIPTICONE, the other half of the merchandising pair, delivers the "punch" of attractive high-lighting for featured goods.

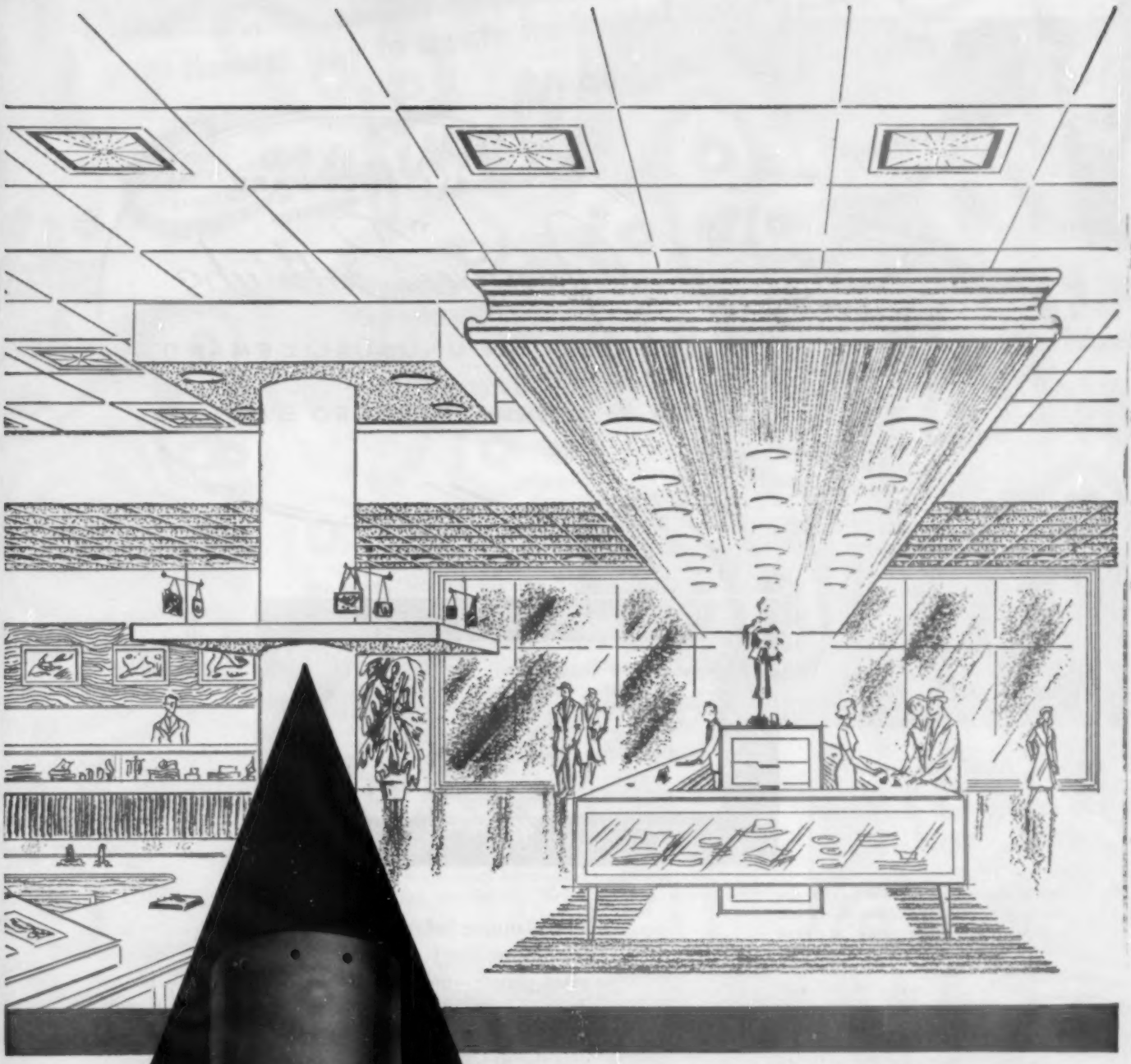
This merchandising pair combines to provide modern store lighting . . . making goods look better and sell faster.

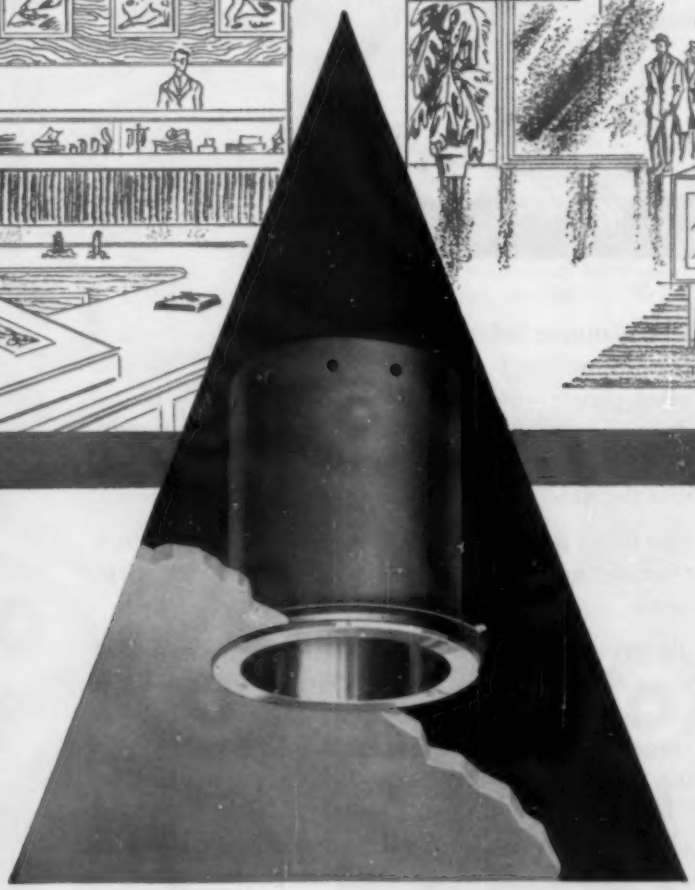
Here is sales-producing incandescent lighting at its best!



ELIPTISQUARE

Merchandise lighted with ELIPTISQUARE'S clear, prismatic Amcolens reflects its true color value. For general area lighting, advanced ELIPTISQUARE recessed and surface units provide highest light transmission efficiency.





ELIPTICONE

For the optimum in accent lighting, ELIPTICONE delivers the unusual in shielded, recessed and surface illumination. Complete absence of brightness, from any normal viewing position, on the visible surface of ELIPTICONE, creates a dramatic unawareness of the light source.

THE **ART METAL** COMPANY

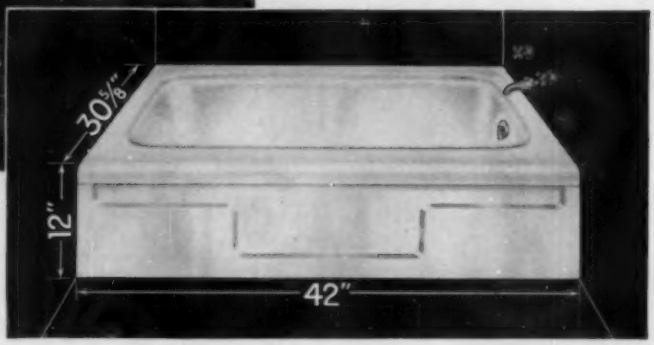
CLEVELAND 3, OHIO

The Hartford Statler
William B. Tabler, *Architect*
George A. Fuller Co., *Contractor*
C. H. Cronin, Inc., *Plumbing Contractor*

ALLIANCEWARE

"Junior" Bathtubs

ANSWER AN UNUSUAL DEMAND IN THE NEW HARTFORD STATLER



The AllianceWare Junior has all the fine quality of every AllianceWare tub with wide seat rim; patented grab rail construction; leakproof flange; choice of 5 stainproof colors and white. Size—42″ long, 30⅝″ front to back, 12″ high—makes this an unusually suitable tub where space is limited. As a shower receptor the Junior far exceeds in roominess and convenience the ordinary shower stall. Write for complete dimensions and installation diagram.

The planning behind the new Hartford Statler is a fascinating story of the most careful research into what people—guests and employees—do or like to do in a hotel. Included among the great multitude of detailed studies were the shortest plumbing runs and the most efficient minimum bath requirements.

The many insurance companies in Hartford conduct training courses of several weeks duration. "Students" demand minimum-cost accommodations.

To provide these accommodations six minimum rooms or "roomettes" in addition to the regular size rooms, were planned for each floor of this hotel that research built. Bathtubs of ordinary dimensions were too large for the "roomettes." But AllianceWare "Junior" tubs—42 inches long—met the conditions ideally. So every Hartford Statler roomette—78 in all—is fitted with an AllianceWare Junior tub.

AllianceWare
PORCELAIN ON STEEL

ALLIANCEWARE, INC. • Alliance, Ohio
Plants in Alliance, Ohio and Colton, California
Bathtubs • Lavatories • Closets • Sinks

Newest way to create horizontal accent...economically
NEW FACTORY FINISHED Craftwall
hardwood plywood paneling offers great design opportunities
If you are designing modern interiors for residences, offices, institutions or commercial establishments, Roddis Factory-Finished Craftwall offers many practical and economical design opportunities — whether the project is new construction or modernization.
Roddis Craftwall is designed for vertical and horizontal applications. Many interesting combinations of both applications can be developed. The various styles and sizes cut economically — reduce waste and installation time.
Roddis Craftwall is as beautiful as it is practical. Made in 8 handsome hardwoods and Knotty Pine, it is factory-finished to bring out the natural beauty of the wood and provide a durable, long-lasting finish that requires a minimum of maintenance. Stock items in hardwood moldings and trim to match are available. Write us today for full particulars.
Craftwall
design suggestions . . .
No. 2 of a series
Paneling illustrated is Cherry Craftwall, Style 400 with matching V-grooves for horizontal installation. It is only one example of the many ways Craftwall makes better interiors possible.
Roddiscraft
RODDIS PLYWOOD CORPORATION
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WAREHOUSES IN PRINCIPAL CITIES
Consult your Classified Directory

BETTER JOB!

CHASE copper tube for soil, waste and vent lines at little or no extra cost!

Consider *installation* costs, and you'll see why a Chase quality drainage system will cost little or *no more* than an ordinary system. Actual comparisons *prove* this!

Chase 3" Copper Drainage Tube fits *within* standard partitions, eliminates costly furring-out construction required with ordinary systems.

The *inside* of a Chase Drainage System is also worth talking about – Chase Copper Tube and Solder-Joint Fittings have no internal projections to trap waste – they provide fast, even drainage and make a neater, more compact job all around.

When planning, be sure to specify the best in copper drainage tube and fittings – be sure to specify *Chase!*

Chase ®

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

Chase® Copper adds extra value to any home!

The Nation's Headquarters for Brass & Copper

Albany†	Chicago	Detroit	Los Angeles	New York	St. Louis
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Baltimore	Cleveland	Houston	Minneapolis	Pittsburgh	Seattle
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another outstanding FA TRADE MARK installation

NEW YMCA BUILDING AT TULSA, OKLAHOMA

Leon B. Senter, Tulsa, Architect;
Reg E. Taylor, Houston, Tex., Engineer.

The new and modern YMCA building in Tulsa, Okla., is the latest addition to the growing list of new and modernized buildings — commercial, industrial, institutional and residential — equipped with Ⓕ products for the control and distribution of power and light.

Like so many others, officials of the Tulsa "Y" learned, after careful study, that Ⓕ products were safe, dependable, long-lasting and trouble-free, and that they not only provide for present-day power needs, but allow for future expansion.

The next time you design a building, specify Ⓕ products for control and distribution of light and power. You'll find it pays.

For further information, consult our catalog in Sweet's or your nearest Ⓕ representative.

Ⓕ Switchboard installed in new Tulsa "Y". The complete line of Ⓕ switchboards includes:
Ⓕ SHUTLBRAK — 30 to 1200 amps., 250 volts AC or DC and 600 volts AC 2, 3 and 4 poles. Rotary type operating handles furnished on 30 to 200 amp. capacities. Straight handles on all others.
Ⓕ KLAMPSWITCHFUZ AND SNUFARC — Klampswitchfuz capacities 30 to 600 amps., 250 volts AC or DC, 2, 3 and 4 poles, single or double throw. Snufarc 30 to 200 amps., 600 volts AC 2, 3 and 4 poles.
Ⓕ CIRCUIT BREAKER — 15 to 600 amps., 250 volts AC or DC and 600 volts AC, 2 and 3 poles.
Air circuit breakers used for larger capacities.

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Chicago's Grant Park Underground Garage uses Corning flat and bent Alba-Lite lightingware. Alba-Lite comes in a variety of bends to provide design flexibility. Flat Alba-Lite panels are available in three patterns offering true light source transmission, exceptional brightness control by diffusion, high fixture efficiency, permanence and low upkeep cost.

Owner—Chicago Park District
Consulting Engineers—Ralph H. Burke, Inc., Chicago, Ill.
General Contractor—Electrical work installed by White City Electric Company and J. Livingston and Co., under John Griffith & Son Construction Co., all of Chicago, Ill.
Fixture Manufacturer—Solar Light Manufacturing Company, Chicago, Ill.

Safe, glare-free illumination

for world's largest underground garage

No more circling weary blocks looking for a place to park in Chicago's busy Grant Park area.

Now you swing your car off the street down a ramp to the new Grant Park Underground Garage. There's space there for 2359 cars in 787,000 square feet of floor space.

Lighting in this garage, wherein 90% of the cars are self-parkers, must provide for quick adjustment from natural to artificial illumination. "Avenues" must be bright—but free of accident-causing glare and shadows. Walkways must be safe for pedestrians on their way to and from their cars.

High efficiency

Corning Alba-Lite lightingware was selected because it meets all of the requirements for safe lighting established by the Chicago Park District. Alba-Lite is a translucent opal glass. It transmits 60-65% of the light and diffusely reflects 25-30% for an efficiency of greater than 90%. And Alba-Lite transmits the true color of the light source.

In this area where discoloration of lightingware by exhaust fumes could be an expensive maintenance item, easy-to-clean Alba-Lite again proves a wise choice. Nor will time ever dim Alba-Lite's sparkling appearance.

For additional information about Alba-Lite and other Corning-engineered lightingware—louvering, diffusing, and prismatic—use the form below.

Connected lighting load, approximately 450 KW. Maintained lighting level, main thoroughfares, 22 foot-candles. Maintained lighting levels, distribution center, 30 foot-candles. Average parking area illumination, 10 foot-candles.

CORNING GLASS WORKS
CORNING, N. Y.

Corning means research in Glass

CORNING GLASS WORKS, Dept. PA-2, Corning, N. Y.

Please send me a copy of the "Architects and Engineers Handbook of Lighting Glassware."

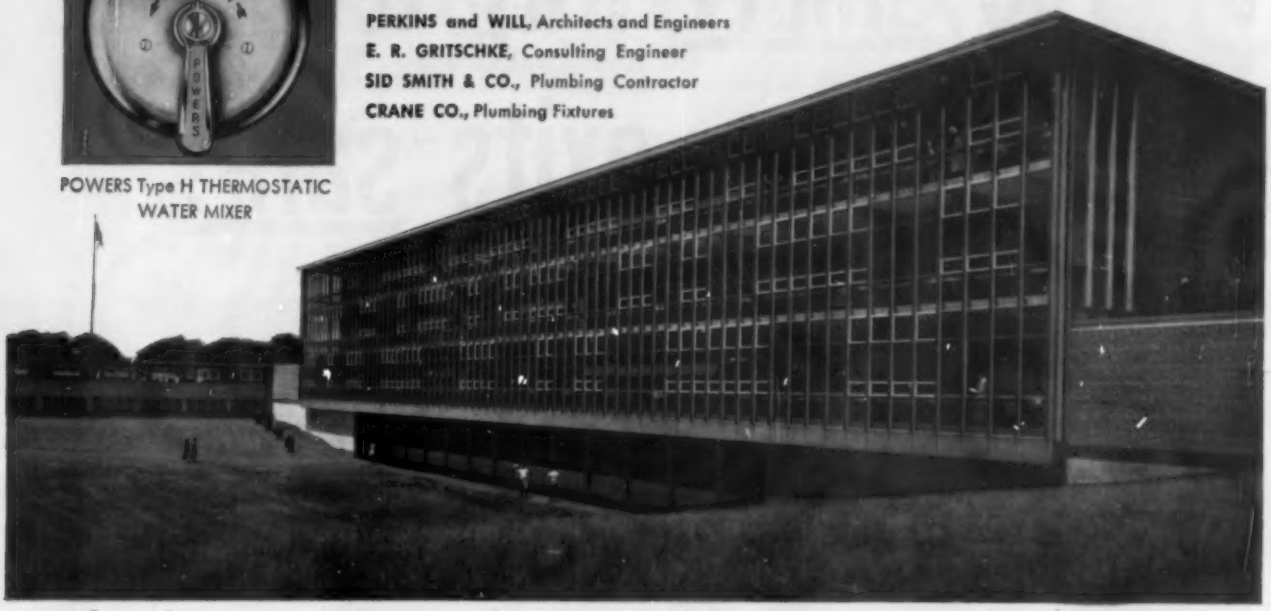
Name.....Title.....
Company.....
Address.....
City.....Zone.....State.....

POWERS Type H THERMOSTATIC WATER MIXER

SENIOR HIGH SCHOOL AND COMMUNITY COLLEGE, Keokuk, Iowa

Another Prominent Powers Shower Mixer Installation

PERKINS and WILL, Architects and Engineers
E. R. GRITSCHKE, Consulting Engineer
SID SMITH & CO., Plumbing Contractor
CRANE CO., Plumbing Fixtures



Why Showers in More and More Modern Buildings Are Regulated by

Nothing is more relaxing and refreshing than a Powers thermostatically controlled shower. One shower accident can be costly in damaging publicity, personal injuries and time consuming lawsuits. Why not provide insurance against these risks? Specify and install Powers *thermostatic* mixers.

POWERS

Thermostatic WATER MIXERS

Bathers Always Get Safe, Comfortable Showers when temperature is thermostatically controlled by Powers. There's no danger of slipping and falling while trying to dodge an unexpected shot of cold or hot water.

Check these Modern Powers Features — that provide utmost safety, comfort and economy:

- Regardless of **pressure** or **temperature** changes in water supply lines . . . shower temperature remains constant wherever bather wants it
- Failure of cold water supply instantly and completely shuts off shower.
- No danger of scalding caused by "dead end" in hot water supply line. Powers mixers have a reliable **thermostatic** safety limit of 115°F. A sudden rise of 100° in hot water supply to mixer is barely noticeable by a bather in a Powers regulated shower.
- **Powers Mixers Save Water.** No time or water is wasted by bather having to get out from under shower due to fluctuating temperature. Water conservation makes them more economical.

Consult Powers on Shower Planning. For Engineering data on thermostatic control for all types of shower baths call your nearest Powers office or write us direct.

(b93)

SERVICE Available in 60 Cities in the U.S.A., Canada and Mexico. See your Phone Book

Established in 1891 • **THE POWERS REGULATOR COMPANY** • SKOKIE, ILLINOIS

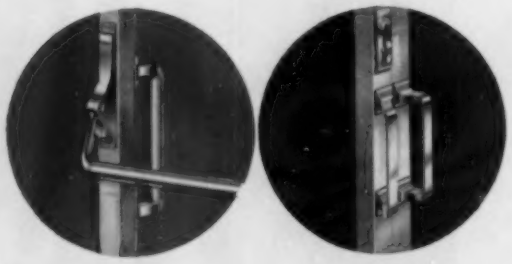
The smart way to make modern exits safe!

Von Duprin NC
Narrow Concealed Exit Devices

● For single or double door exit installations—wherever modern is the mode and narrow stile doors the plan—*always* insist on Von Duprin Narrow Concealed Exit Devices.

Von Duprin NC Exit Devices are reversible, spring actuated. Vertical rods slide smoothly, efficiently and quietly within hollow stiles. Inside and outside trims accentuate the feeling of lightness—enhance the smart, modern design. And over all, the quality construction, precision engineering and superior finish assure you of the durability and year-in, year-out performance that is synonymous with the name Von Duprin.

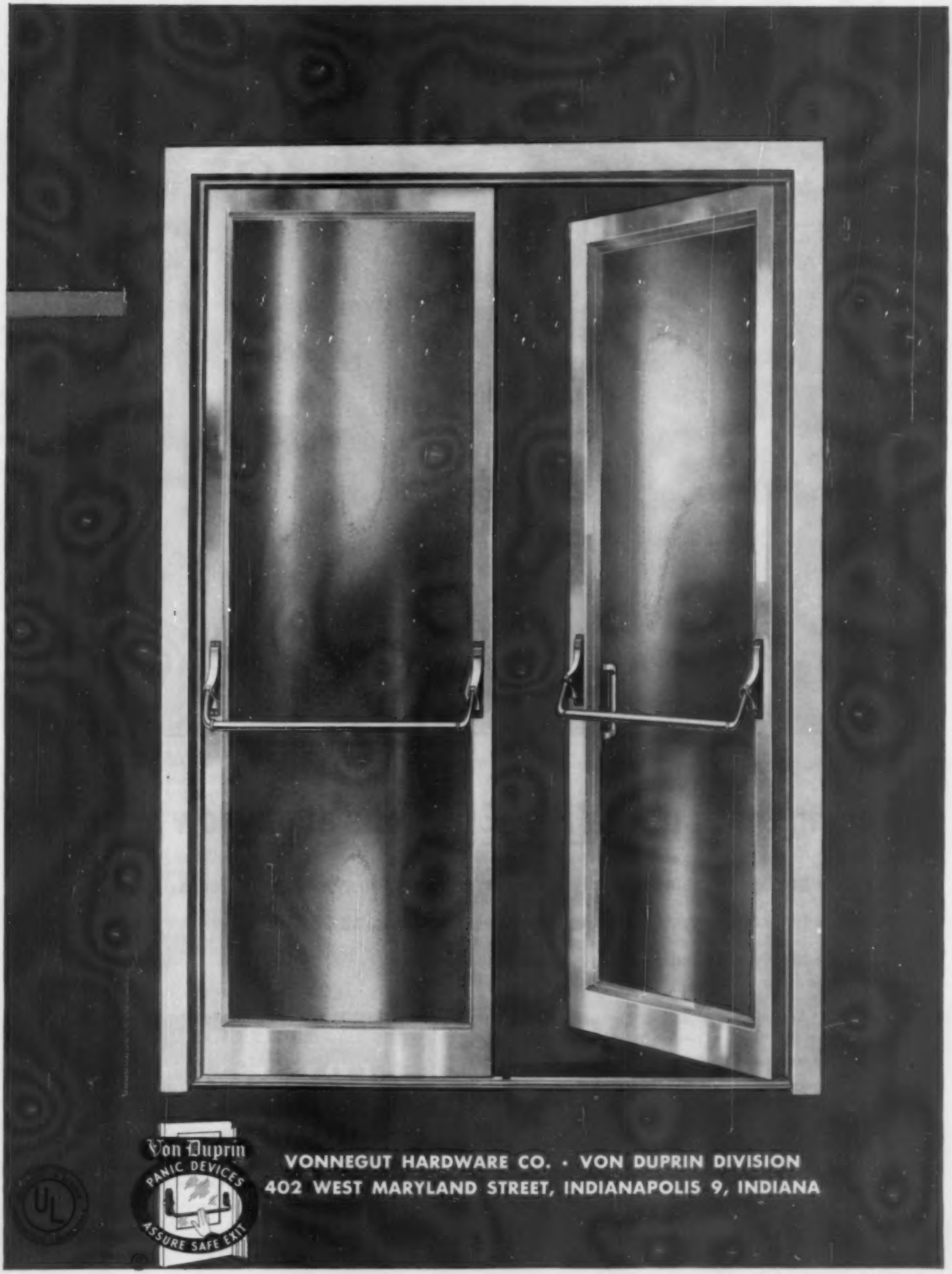
Whatever your exit installation problem, you may be sure that the complete line of Von Duprin exit devices and auxiliary hardware can help you provide "the safe way out!" Check today with your nearby Von Duprin "Exit Specialist"—a factory representative or selected hardware distributor. If you don't know his name write direct to the factory.



INSIDE OUTSIDE

Check these NC features

- **all bronze**
- **crossbar X-Bar reinforced**
- **drop-forged internal parts, lever arms, exterior control and trim**
- **reversible—for doors of either hand**
- **Approved by Underwriters' Laboratories, Inc. for accident hazard**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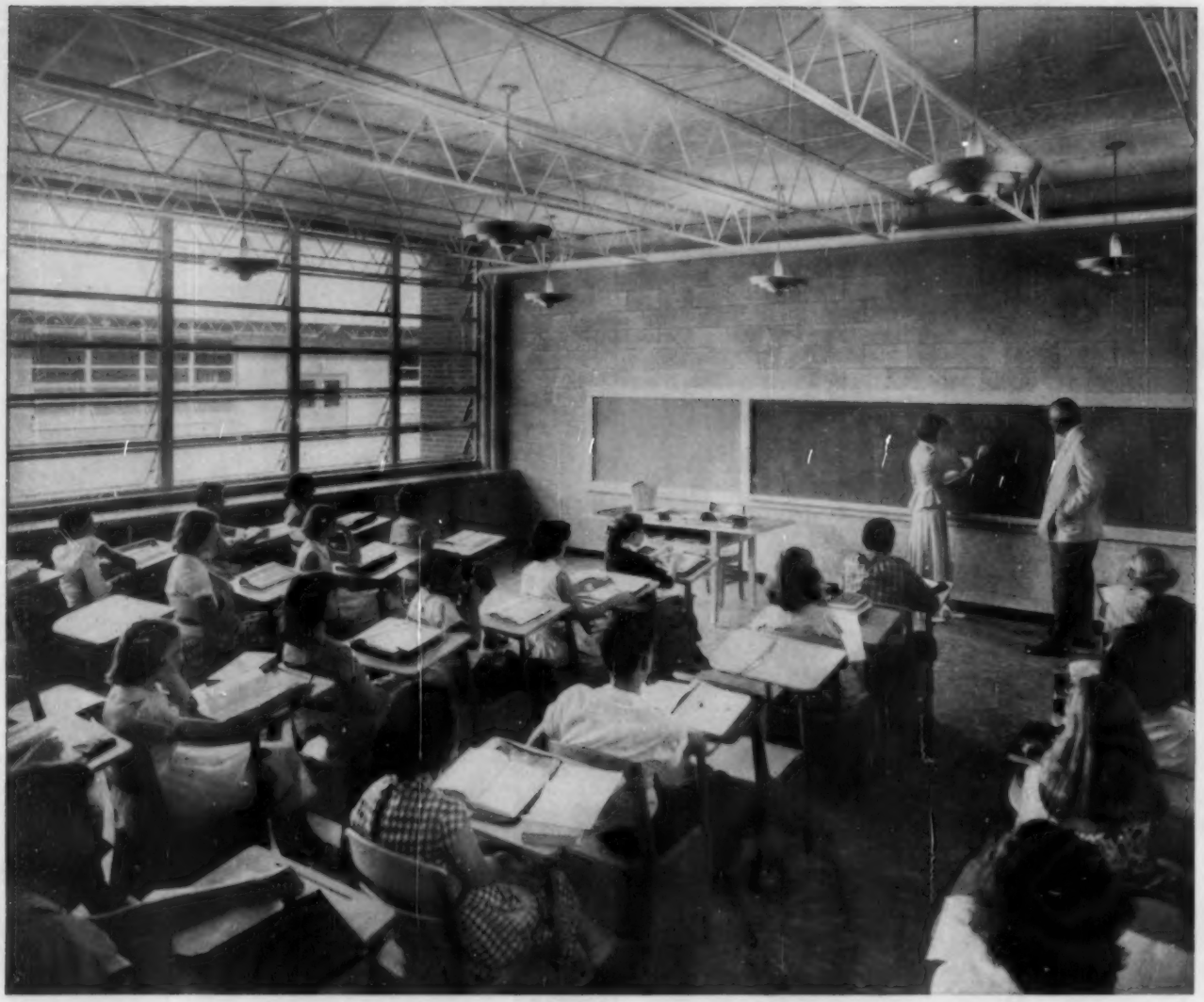

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For complete technical data, see our catalog in Sweet's, or write: Owens-Corning Fiberglas Corporation, Dept. 63-B, Toledo 1, Ohio.

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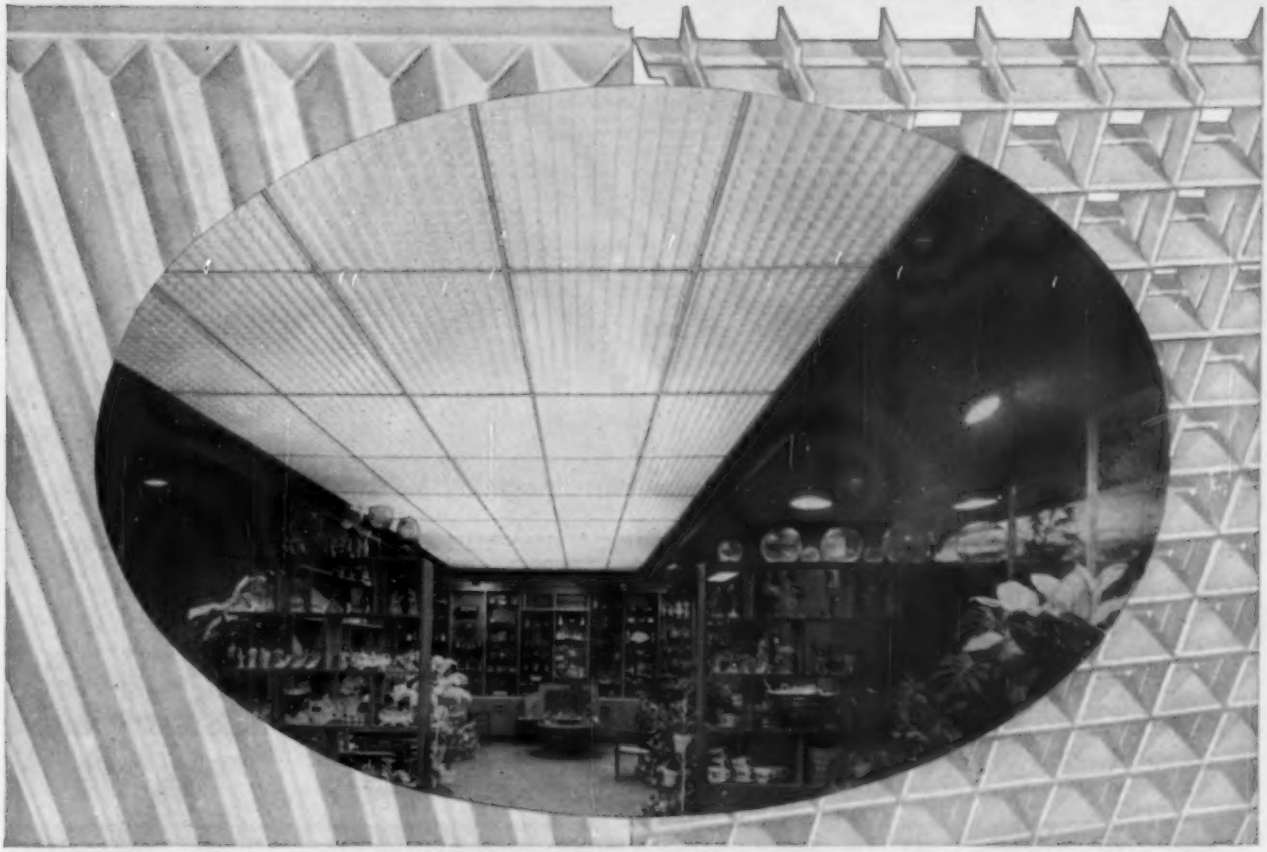

"PANEL-GLO", lowest-cost Benjamin Luminous-Panel Ceiling, is made of translucent, white molded vinylite. Odorless; distortion and shrink-proof. Has invisible ducts to facilitate air circulation.

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SIMPLIFICATION LIKE THIS
makes Benjamin Luminous Ceilings
LOW in OVERALL COST!

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EASIER, FASTER INSTALLATION because panels and louvers can be trimmed right on the job to fit any size or shape ceiling.

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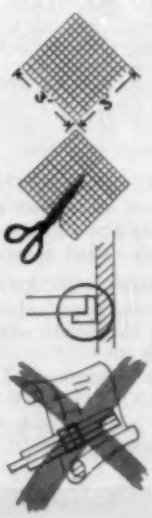
SIMPLER TO ORDER AND SPECIFY! BUY IT BY THE SQUARE FOOT! All you have to know are the room dimensions and type of ceiling! You get all the materials for the job: louvers or panels; channels and channel fittings; finishing strips; support rods and suspension fittings; fluorescent strip lighting units (w/o lamps).

Approved by U.L.



For new stores or modernizing existing sales areas, Benjamin "Sky-Glo" and "Panel-Glo" translucent ceilings offer a low-cost way to create the modern look that makes people want to buy. Get high levels of illumination that show up merchandise to best advantage... 100, 130 or more foot-candles, without awareness of the fact. Change a ceiling laced with fixtures, ducts and pipes into a magnificent "ceiling of light", without additional renovation! Drastic simplification without sacrificing effect or efficiency, enables Benjamin to bring you these luminous ceilings at an installed price so low, that in most cases it is actually the most inexpensive way to modernize the ceiling! For further details, write for Bulletin AD 6222. Benjamin Electric Mfg. Co., Des Plaines, Illinois.

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Sold Exclusively Through Electrical Distributors

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Materials and Methods

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LONG-WEARING . . . Vinyl floor tile offers outstanding resistance to abrasion and wear. In office buildings or wherever traffic is heavy day in and day out, vinyl tile has a proved record of durability.

LASTING BEAUTY . . . Vinyl floor tile is alive with bright, glowing color. Light and dark solids, soft pastels, new marbleized designs, suitable patterns for every installation! Colors are tile-deep, can't fade or wear off.

STAIN RESISTANCE . . . Vinyl floor tile is practically immune to grease, alkali, bleaches and harsh cleansers. Stable to heat and light, too!

EASY TO MAINTAIN . . . Vinyl tile wipes clean in seconds, retains a smooth, lustrous surface for years, requires only occasional waxing.

MANY APPLICATIONS . . . Available in pliable or rigid form, vinyl tile can be used over almost any kind of dry, smooth surface, comes in a wide range of prices.

SPECIAL INGREDIENTS . . . Flexibility, stain resistance and many other superior features of vinyl tile are provided by Monsanto chemical materials called plasticizers.

FOR MORE INFORMATION and the names of companies manufacturing vinyl tile, contact the nearest Monsanto sales office, or write to Organic Chemicals Division, MONSANTO CHEMICAL COMPANY, Box 478-D, St. Louis 1, Missouri.

MONSANTO
CHEMICALS – PLASTICS

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1907...

a famous date in construction

...the first white portland cement MEDUSA WHITE was used!

On this historic date the first commercial white portland cement was given to the building field. After years of intensive research Dr. S. B. Newberry had accomplished his life-long quest for a portland cement that was white, and far more beautiful than any other cementitious material. And equally important, his method of making Medusa White cement was so inexpensive that architects and contractors were able to adapt it to a multitude of uses. Within a short time Medusa White became the accepted way for making finer stucco, cast stone, mortar and white concrete. Within a few years it was standard practice for better sculpture, cast slabs and terrazzo.

The pure "diamond blue" whiteness of Dr. Newberry's cement is something that just couldn't be improved. No other cement in the half century since its perfection has ever equaled the white color of Medusa White. It's no wonder that only recently it was selected carefully from all other cements for such outstanding construction as the United Nations Permanent Headquarters and the restoration of Independence Hall.

If you are planning construction of a better type, specify famed "non-staining" Medusa White, the original white portland cement for stucco, pre-cast slabs and terrazzo.

MEDUSA Portland Cement Company

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WHITE TILE GROUT CEMENT

MAKERS OF AMERICA'S FINEST PORTLAND CEMENTS FOR OVER SIXTY YEARS

SelecTemp room units, only 18 inches high, are recessed into wall and can be painted to match color scheme. Three sizes: 6,000, 12,000, and 18,000 Btu output. 12,000 Btu size shown below. No electric wiring or power is used. Small flexible copper tubes carry steam to each room unit.

Why Iron Fireman® SelecTemp® is the greatest advance in modern heating

This Quick Quiz Tells Story

Features never before available bring new heating standards to apartments, hospitals, motels, office buildings, schools and other buildings of every size and type.

Q. What features are new and better in Iron Fireman SelecTemp heating?

A. (1) Thermostat in every room; (2) modulated (not "on-off") heat; (3) filtered warm air continuously circulated; (4) easily installed in new or old construction; (5) boiler can be located anywhere; (6) moderate operating costs.

Q. How does SelecTemp provide individual room temperature control?

A. Each room heating unit has its own thermostat. Temperature in any room, including bathrooms, can be raised or lowered without affecting temperature in any other rooms.

Q. What is meant by "modulating" heat?

A. SelecTemp is not "on-and-off" heating. Each room unit automatically modulates its own heat output. Steam turbine operated fan in each unit runs faster or slower, according to amount of heat needed, gently circulating filtered warm air.

Q. What happens when south rooms face warm sunshine and north rooms face cold winds?

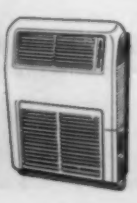
A. SelecTemp heaters in the rooms affected act at once, adjusting heat output to the needs of the individual rooms. Heating units on the warm side of the building slow down to compensate for solar heat, while those on the cold side increase heat delivery to make up for extra heat loss. SelecTemp units mounted in outside walls quickly sense temperature changes and automatically increase room temperature to keep comfort level constant. Reaction is fast and accurate—no outside thermostats required.

Q. Is SelecTemp reasonable in cost?

A. Yes. The system is engineered for very economical installation and operation, both in new construction and modernization. SelecTemp, a new, different and revolutionary kind of heating, is one of the most desirable features you can put into any type of building where human comfort is involved.

SEND FOR FREE SELECTEMP BOOKLET . . .
Contains complete description, with specifications for builders and architects. Use coupon below.

Iron Fireman®
SelecTemp®
MODULATING ZONE HEATING



Iron Fireman Manufacturing Company
3085 W. 106th St., Cleveland 11, Ohio.
In Canada: 80 Ward St., Toronto, Ontario.
Please send free descriptive booklet on SelecTemp heating.

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NO. 95 SCREEN DOOR LATCH

Western's new Screen Door Latch for wood or metal screen, storm and combination doors.

Here is a latch which has every feature to make it the outstanding screen door latch on the market: Machine screw installation... completely factory assembled... automatically fits doors ¾" to 1⅜" thick... simple push-pull action... finger-tip locking.

- ★ **NO wood screws in door**
- ★ **NO mortising**
- ★ **NO adjusting**
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Available in brass, bronze, chrome, black, aluminum and cadmium finishes.

SPECIAL INTRODUCTORY DEAL!

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Manufacturers of Weslock Residential Locksets and Builders Hardware

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Alcoa Building, Pittsburgh, Pa. *Harrison & Abramovitz, Architects*

marble *the final touch*

that gives distinction - with low maintenance

When the last brilliant idea is born and the concept begins to take form, there is one final fact to be faced: BEAUTY MUST LIVE WITH ECONOMY. And Marble effects this union today — as it has always done in the past.

There is no material more beautiful, no material more economical, none more easy to maintain than Marble.

***Literature available* FREE**
"Proof that marble costs less"
"Marble Forecast 1954-55"
"Marble in the Bank"

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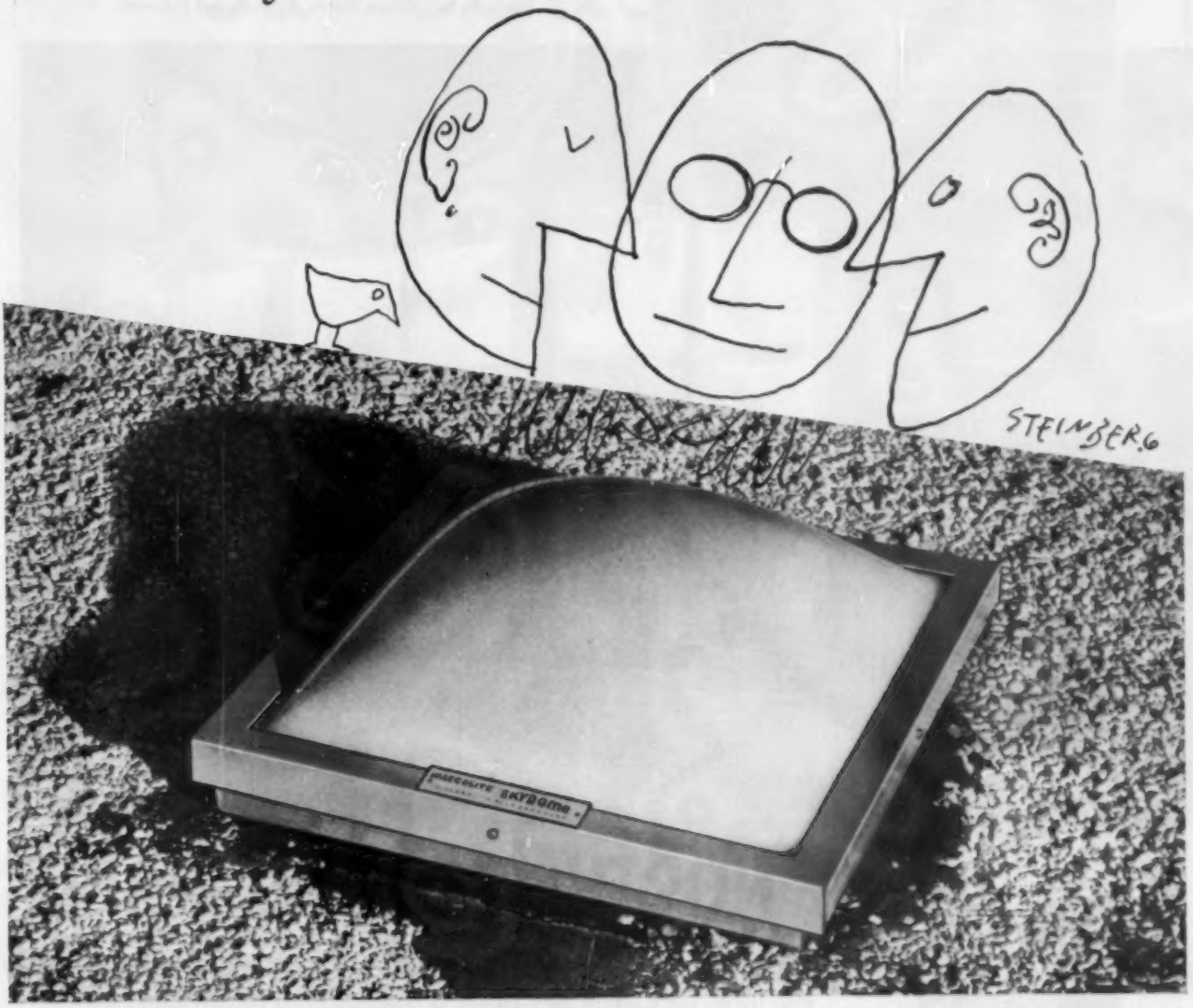
108 FORSTER AVENUE MOUNT VERNON, NEW YORK

Architect, builder and client solve construction problems with this great new line of **WASCOLITE** *products for* **OVERHEAD DAYLIGHTING** *plus...*



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Automatic fire venting
WASCOLITE PYRODOME

Easy access to roof
WASCOLITE HATCHWAY

Look into this great new line of Wascolite daylighting products . . . see Sweet's or write:

• TOP SPECIALISTS IN DAYLIGHTING AND FLASHING PRODUCTS

WASCO FLASHING COMPANY. 90B Fawcett Street, Cambridge 38, Mass.

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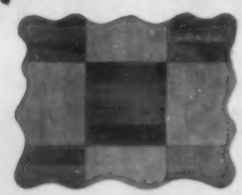
pride *of the* community!

Gentle Community Building, Houlton, Maine. Alonzo J. Harriman, Inc., Auburn, Maine, Architects and Engineers

foot-friendly NORTHERN HARD MAPLE



Cost is surprisingly low for the ultimate in luxury flooring—in blocks and modern patterned designs as well as the more conventional strip form. Readily laid in mastic, over concrete or softwood sub-flooring.

• The air of hospitality that beckons the townspeople of Houlton into their new Community House is repeated with cordial emphasis within. The warm, "foot-friendly" comfort of resilient, Northern Hard Maple Flooring extends its own invitation. Activities room, dance lounge and gymnasium-auditorium—all are maple-floored, for enduring, low-cost "housekeeping" and maintenance. We believe you'll agree, the building's low $7.75 unit cost ($123,750 for its 10,000 square feet) bespeaks to some degree the economy of "the finest floor that grows." Write for latest literature, or consult Sweet's (Arch. 12K-MA).

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 583, Pure Oil Bldg., 35 East Wacker Drive, Chicago 1, Ill.

FLOOR WITH *NORTHERN* HARD MAPLE
BEECH AND BIRCH

"or equal"...?

Published with the permission requested of Maguolo & Quick, prominent St. Louis Architects, this resume of their policy with respect to the "or equal" phase of specifications, is of widespread interest to Architects and Contractors alike.

"A paragraph allowing substitutions of lighting equipment has been inserted in the electrical specifications and so worded to *dispel any notion that the specifications are restrictive.* The procedure outlined in this paragraph for obtaining approval of any substitutions protects the owners against the possibility of the basic standard of quality being subverted.

Our experience has taught us:–

(a) The electrical bids should be uniform and the standard of quality of lighting equipment should be established in the specifications. This insures all electrical bidders being on an equal basis.

(b) Electrical bids can be distorted when some bidders are allowed, or find it necessary, to play with the lighting fixtures. Such a bidder's assumption of a thing to be equal, and the pressuring for approval, many times hides the value and the proper cost credit from being passed along to the owner. This makes for a very unhappy ending.

(c) The standards set up in the specifications have evolved through our experience from project to project. We have learned one thing positively: that the lighting equipment business, unfortunately, is unique in that too much equipment is "sold" on the basis of catalog illustrations and not on the true merit of quality of design, construction, performance and ease of maintenance.

(d) If a commonly used and rather insidious phrase "or equal" is put in the specifications, we have found that many electrical bidders *presume* to judge what is equal to what is wanted by the owner in the way of quality. In effect, some bidders redesign the project to their liking and at a profit to themselves and the utter dissatisfaction of the owner after the installation is complete. It is difficult to combat a thing that resolves itself to an opinion, and the phrase "or equal" does just that.

(e) If the more firm phrase "or approved equal" is put in the specifications, we have found that salesmen descend upon the office in droves a few days before the bids are due and try to stampede us into a decision *without an opportunity to consult with the owner.* An intelligent analysis cannot be made under such pressure of time. We know such action results in the *distress to us as your designer* and to *you* who must live with the equipment for twenty or more years.

(f) We have learned that the best procedure is one that established the standard of quality as a basis for bidding. Then, after the rush of bidding and contract letting is over, any substitutions that might be *beneficial to the owner* and result in a saving can be intelligently considered. A complete review can then be made by looking at two samples: one lighted and mounted, the other unlighted and displayed for a deeper analysis of the quality of fabrication and finish.

(g) This insures a painless, positive and clear-cut determination of whether the saving offered in the substitution is a real or a false value."

This advertisement is sponsored by Day-Brite Lighting, Inc. of St. Louis in the interests of clients of Architects and Engineers.

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by
MITCHELL

"LODESTAR" LIGHTED
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MITCHELL "LODESTAR" Luminaires are lighting modern interiors everywhere. These trim-lined units offer important lighting advantages attained by a substantial upward component which provides a "general diffuse" lighting effect. Semi-translucent side panels achieve a pleasing low brightness contrast. The superior louver design delivers abundant, properly shielded illumination. This superior lighting with its smooth modern styling, unusually low maintenance factor and surprisingly low cost makes the MITCHELL "LODESTAR" Luminaire the wisest choice for Commercial, Institutional and School use...full details available on request.

where quality counts
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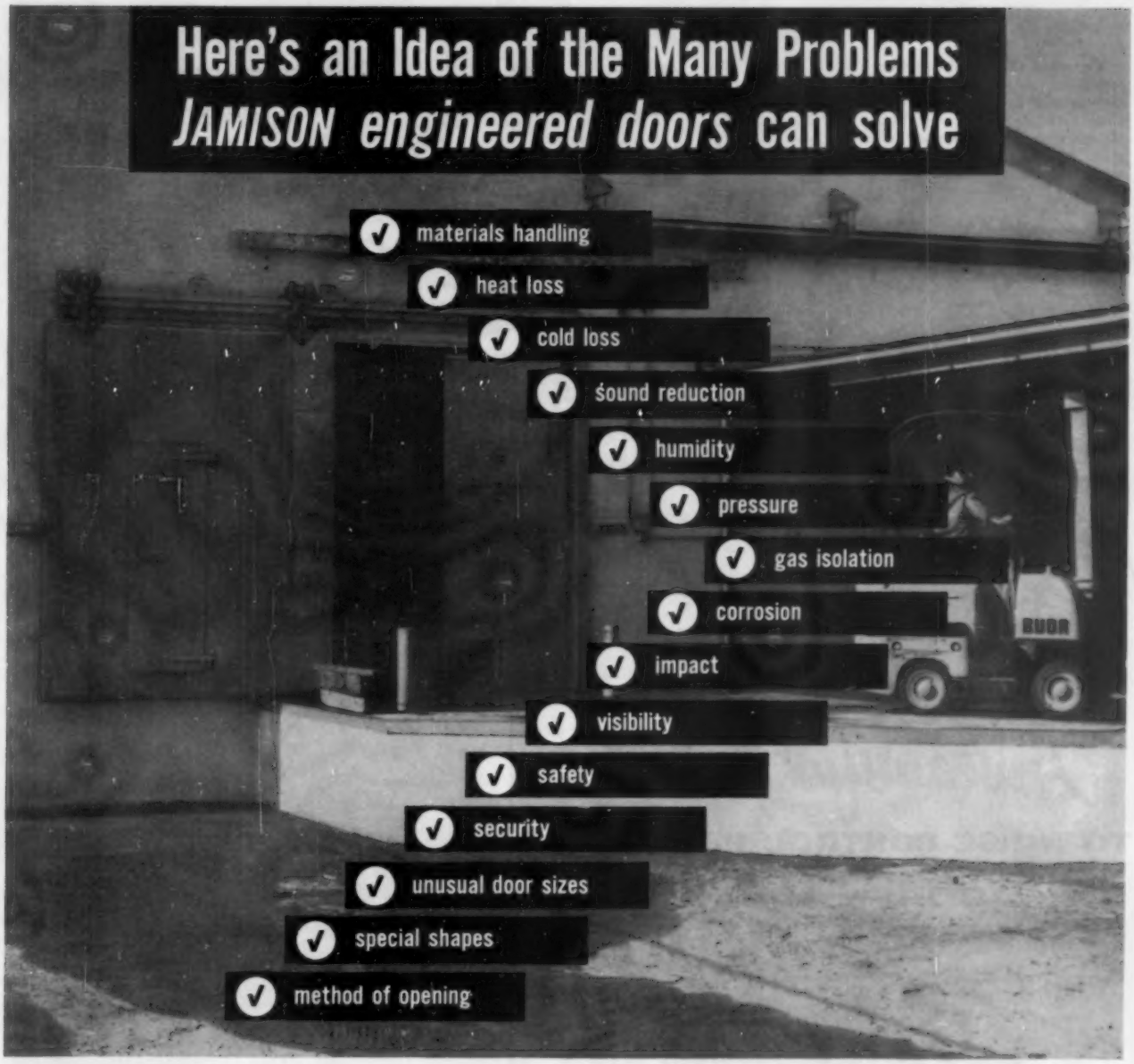
MITCHELL MANUFACTURING COMPANY
2525 N. Clybourn Ave., Chicago 14, Ill., Dept. 5-B
In Canada: Mitchell Mfg. Co., Ltd., 19 Waterman Ave., Toronto



Whenever a door must meet unusual or exacting requirements, Jamison has the effective, trouble-saving solution. Jamison now offers industry and architects an engineered door service for all kinds of problems. This means greater freedom in plant design . . . greater efficiency in plant operation. Whatever the problem, Jamison brings to it solution-minded research, engineering and production . . . plus more than 50 years' experience in developing cold storage and other special-purpose doors. Send the coupon now for specific information.

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Without obligation, I'd like your recommendations on a door that must_____

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Name_____ Title_____

Company_____

Address_____

This view in the Board of Directors Room of the recently completed general offices of the Brown Shoe Company, St. Louis, Mo., shows how Permacoustic provides a ceiling that is beautiful and acoustically functional.

A beautiful Solution

TO NOISE-CONTROL PROBLEMS

Johns-Manville

Permacoustic

decorative acoustical tile

J-M Permacoustic® is an acoustical ceiling tile that combines maximum acoustical efficiency with unusual architectural beauty and complete fire safety.

Permacoustic is available with either a textured or fissured surface. These random-textured finishes increase its high sound-absorbing qualities, and provide design and decorative interest.

Made of baked rock wool fibres, Permacoustic is fireproof—meets all building code fire-safety requirements. It is easy to install on existing ceilings or slabs, or by suspension using a spline system of erection.

Send for your free copy of the new brochure about Permacoustic tile. Write Johns-Manville, Box 158, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

INFORMATIONAL DATA ON PERMACOUSTIC

Sizes 12" x 12" 12" x 24"	Thickness ¾"*	Color: white
	ACOUSTICAL EFFICIENCY	
	Test No. AS1-98	Test No. AS1-99
cycles per second	cemented to plaster board (mounting No. 1)	mechanically mounted on special metal supports (mounting No. 7)
125	.04	.56
250	.21	.53
500	.75	.60
1000	.88	.73
2000	.85	.88
4000	.78	.88
noise reduction coefficient	.65	.70
weight per sq. ft.	1.3	1.3

*Also available in ⅞" thickness

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Easy does it

Fast placing and erection . . . combined with modern design and strength . . . make Laclede Steel Joists the answer to today's needs in roof construction.

. . . with lightweight, versatile

LACLEDE STEEL JOISTS

Kroger supermarket in Glendale, Missouri.
Architect, Cay Weinel, St. Louis.
Contractor, White Development Corporation, St. Louis.

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Design fundamentals of the

ALL-AIR HIGH VELOCITY distribution system

By F. J. KURTH | *Vice President of Engineering*

Anemostat Corporation of America

A national survey reveals that today, more than ever, engineers are studying, learning and using high velocity-high temperature differential air distribution. Here is a brief discussion of the advantages of the all-air high velocity system over conventional and mixed cycle (air and water) systems.

1. No Coils — No Clogging — No Odor—There are no coils in the all-air high velocity units. Damp coils collect lint and emit dank odors, and the coils must be cleaned periodically.

2. No Individual Fans — Filters — or Electric Motors — The all-air units operate entirely with air which is processed in the main equipment rooms. The 100% induction units utilize the kinetic energy of the high velocity air to mix primary air with the room air.

3. No Conflict of Trades — The all-air units are installed by the sheet metal trades only.

4. More Effective Use of Outside Air in Spring and Fall— More primary air is delivered to the all-air units than to induction coil units. This allows the engineers to operate in the Spring and Fall on outside air and thereby save refrigeration.

All-air high velocity units offer scientific air diffusion. Each high velocity unit is provided with an aspirating or high induction type air diffuser which is scientifically designed to diffuse air without drafts. Each unit can be pressure balanced by an easy-to-operate balancing device and a calibrated orifice. In fact, the Anemostat all-air high velocity system can be balanced more accurately than other systems and in less than half the time required to balance a low velocity system.

High velocity units require practically no maintenance after installation. They have valves of the non-corrosive, die-cast, "rocket-socket" type, which are patented by the Anemostat Corporation of America. All units can be adapted for the following variations:

1. Single duct for zone control or individual thermostatic or manual remote control.

2. Dual duct for thermostatic control or any other type of control.

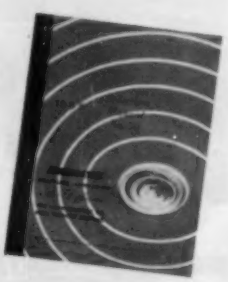
3. Single or dual duct units with the diffuser fastened to the unit, or remote from the attenuating unit.

4. Under-the-window, sidewall or ceiling type installations.

5. Can be provided with standard aspirating diffusers or 100% induction type diffusers.

6. Induction type units handle temperature differentials up to 33° below ambient.

Selection Manual Contains Data on High Velocity Units



New Selection Manual 50 gives extensive selection and application data on high velocity all-air distribution systems. Write on your business letterhead for Selection Manual 50 to the Anemostat Corporation of America, 10 E. 39 Street, New York 16, New York.

Recently P/A received a letter from a well-known public relations firm, stating that it had been approached by an architect who wished to use the firm's services. "What is the attitude of an architectural editor about this, and what suggestions have you to offer?" E. K. Edlich asked. The magazine's answer is given below.

what can a public relations counsel do?

Dear Mr. Edlich: For what it is worth, here is some random thinking on how a professional public relations consultant can best serve an architectural firm. If these comments have any value, it is because I have seen the process operate well, and have seen it operate badly, in various instances in recent years.

First of all, you ask about the approach to architectural editors and the architectural press. Our concern is primarily, of course, with *good design.* Some people think this is an arbitrary judgment, but the three national magazines see so nearly eye to eye on what *is* good design, and our opinions are bolstered so continually by local and national Awards juries that the criteria are quite obviously objective—the old ones of unity and contrast, harmony and rhythm, scale, proportion, and so on. No editor would expect a public relations advisor (or even an architect overly proud of his work!) to have precisely the same standards the editor has, but he does have the right to expect an approximation of and some understanding of those standards. There is a terrific amount of lost motion in sending, examining, and returning material that is *obviously* not up to the design standards of a professional architectural magazine.

Beyond that, the rest of the "pitch" is very important. Today there is a lot of good design being produced—much more than three national magazines can publish. The next questions would be:

Is the construction method of interest?

Are materials used in an interesting way?

Is the building type one which is of current importance or

Is the building type unusual enough to be interesting?

Is there some planning innovation worth documenting?

Is there a relation with city planning or urban development?

Is site planning or landscaping noteworthy?

Is heating, lighting, air conditioning, acoustic control noteworthy?

Is the use of color so successful that it deserves notice?

Has sculpture or mural painting been used with unusual success?

Is the building of current news value?

In other words, assuming that the project is good in over-all design, why is it potentially more interesting and instructive to the readers of P/A than other top-flight designs?

Architectural editors like to see jobs early, so that plans to publish can be made far ahead. On the other hand, we don't like to make definite *commitments* to publish until the building is finished. (Many a handsome rendering has been much better than the completed structure!) The answer to this is usually to establish contact and get a statement of interest in early design stages; then on the basis of snapshots (or better yet, a personal visit from an editor) to make firm commitments on both sides as soon as possible after completion. The magazine usually likes to make its own arrangements about photography, in collaboration with the architect. At the time of publication, full and accurate information will be needed on materials, cost data, miscellaneous credits, etc., as well as the architect's program and basis for its solution.

The architectural magazines like "exclusives," as you know, because a lot of time, energy, and money goes into publication, and it's no fun to make this investment and have a competitor run the same story before you. The public relations man who tries to be coy and get stories in *all* magazines in our field inevitably ends up without a full and complete presentation in any.

I might also say that the editors couldn't function without personal contact with the architects. In many cases this is close friendship of a very satisfying sort. A public relations counselor who stands between the architect and the editor and interferes with that personal relationship, is doing his client a disservice. I have seen that happen too often; my friendship with a West Coast architect cooled to a point of frigidity when I had to make a lunch date with him through his public relations man on his recent trip East!

One other thought about the architectural magazines: not only buildings get published, but also articles. P/A is particularly interested in studies of newly important building types; of public relations activities by architects, of good examples of specification writing, and of drafting techniques; of interior design activities; of methods of office practice and business management. Example: we are running soon a story about a California architect's activity in securing copyright protection.* This will receive a lot of attention; it seems to me it's good public relations to get this story printed.

Of course you know as well as I do that a public relations job for an architect must reach far beyond the professional press. The principal values, in a public relations sense, to publication in P/A, *Forum*, or *Record* are the professional prestige, the reprints that can be distributed, the tear sheets mounted in a brochure, and the secondary publicity which can be induced. P/A does a unique job in this respect—we have a bulging scrapbook of clippings from home-town papers, of the "local boy gets national notice" type. A professional adviser could help his client capitalize on professional publication in this way.

We believe, preach, and practice, however, that a *planned* public relations program would include publication of work that deserves it in the architectural press, and in other appropriate media at the same time. We are always happy to co-operate in placing a house in one of the shelter magazines, a hospital in one of the hospital magazines, and so on—simultaneous with, after, or even before our own publication. Architects, as professional planners, have not been very good at *this* sort of planning, and an adviser can be tremendously

* See p. 89, October 1954 P/A.

helpful in finding, approaching, and supplying stories to media that reach potential client groups. The trade press is an obvious outlet (school, office, business, merchandising, hospital, management magazines in endless numbers.

Another area in which professional advice could accomplish much is use of newspapers. News, real estate, and business editors on the daily press *want* architectural material, but they seldom get it in a form they can use. Architects complain that they don't get their names in the papers, but are apt to forget that newspapers aren't interested in names unless they're connected with news. I don't know of any press release on a vital architectural subject which failed to be picked up when it actually contributed news or information.

If the architect has something to offer, he can soon become an "authority," with proper public relations. I could cite you many instances, such as Perkins & Will in school design, Victor Gruen in shopping center planning, etc., where first there was real material for the press, and secondly, press relations were well handled. Without the other, neither would have been sufficient: with both, it soon becomes very natural to see these people quoted whenever their fields of activity are mentioned.

A natural extension of this, of course, is the "personal appearance"—public speaking, radio and TV engagements, and what not. Again, these are not difficult to arrange, if there is really something to offer. And Lord knows, the profession of architecture needs good spokesmen in all these media.

Not knowing who your potential client is, I guess I can't be more specific; anyway, you know these things better than I do. Having seen the efficacy of professional public relations, I am sure that it would be possible for you to blow up a second-rate architect to national importance. With my interest in good design, I should dislike to see that done. On the other hand, nothing would please me more than to see your firm's abilities put behind the advancement of an architect who really has something to offer in the way of improving the environment. I know that would be a much easier job for you—and I should think, a much more rewarding one.

Thomas H. Creighton, Editor

architects' accounting—1

While it is obvious that all types of business organizations must keep accounts, this is of particular importance in the case of an architectural firm because of the peculiar type of "commodity" dealt with. Basically the reasons for keeping accounts are:

(1) To meet the legal requirements for maintaining satisfactory records for tax and insurance purposes;

(2) To show the financial status of the business;

(3) To show actual production costs for a given job.

To fulfil the requirements for (1), it is evident that records must show all income and expenses. Expenses shown should be documented by receipts. It is a matter of law that all money drawn by an individual principal (partner) against anticipated profits, or profits earned, cannot be treated as a business expense of the partnership, but such drawings are charged only against the individual's capital account. In the case of a corporation, however, salaries paid to officers are an allowable expense. Most architectural firms are not satisfied with a system of books which shows only the "legal" aspects of accounting.

Experience has shown that an architect's accounts must make provisions for showing items (2) and (3) in detail.

While either one of two methods of accounting—cash system or accrual system —may be used to advantage, most architectural firms have found that the cash system is more suitable for their needs. This system is not complicated and is relatively trouble-free. Entries are made only when money is actually received or paid.

The following types of records have served the architects' accounting needs quite adequately:

Cash Journal (Receipts & Disbursements);
Petty-Cash Book;
Time Cards;
Payroll Journal;
Employes Payroll Record;
Job-Cost Journal;
Individual Job Records;
General Journal and General Ledger;
Billing Record.

There follows a brief summary of the functions served by each of the above records. Actual accounting procedures of maintaining these records are well known to the average bookkeeper and this summary is not intending to deal with the mechanics of bookkeeping.

Cash Journal. This contains a complete record of all financial transactions as they occur. It accounts for all monies received and disbursed. When deposits are made, and checks drawn, they are immediately entered in the Cash Journal. For posting into the General Ledger, receipts are a debit to cash and a credit to the nature of the receipt (e.g., Fee, Reimbursement, Capital Investment, etc.)

Disbursements are a credit to cash and a charge to the nature of the expense incurred (e.g., salary checks, rent, etc.)

In addition to posting to the General Ledger categories, income and expense items are posted in detail in the Job Cost Journal. To facilitate this procedure, it is advisable to show respective Job Numbers on the entries in the Cash Journal, to insure proper credit or charge.

Petty-Cash Journal. A check should be

by Siegmund Spiegel* and Herman Meyer**

drawn for a specified amount and entries made to record disbursements as they occur. If they are on behalf of jobs in process, they should be so annotated. The petty-cash fund should be repaid by the identical amount disbursed and at that time items should be charged to the proper job accounts.

Time Cards. Time Cards are memorandum records for hours spent on each job. This information is later transferred to the Payroll Journal. A detailed description of the keeping of time cards was previously discussed in the article "Job Costs—Can They be Controlled" (*May 1954 P/A*).

Payroll Journal. This consists of a periodic (usually weekly or bi-weekly) summary of each employe's earnings, which is broken down in turn into individual jobs. Gross payroll less withholding tax, Federal Insurance Contribution Act items, disability and other insurances, plus reimbursement for sundry individual outlays, result in a net figure and this is the amount of the payroll check issued. The columnar totals of all direct individual jobs and the indirect salary column will be a proof against the gross payroll. In addition, it may be arranged to show the total hours spent on each job per period.

Employes' Payroll Records. The information appearing in the payroll journal is then transferred to an individual sheet for each employe and is used for the preparation of W-2 forms (withholding statements), as well as to complete the required periodic payroll-tax reports on items such as social security, withholding taxes, state unemployment and disability insurances.

Job-Cost Journal. Receipts from fees earned and disbursements made on behalf of each job are posted from the Cash Journal to the General Ledger (on a sheet called Job-Cost Control) and also to the Job-Cost Journal. Contra-wise the Job-Cost Journal is posted to the Job-Cost Control in the General Ledger. The debits and credits in the Job-Cost Control Account must balance, or there is a discrepancy in the records.

Individual Job Record. This record is of extreme importance to the architect because it itemizes all direct expenses incurred for doing a particular job. It gives such information as:

Fee income;
Reimbursal of expenses;
Salaries to Technical Personnel;
Hours Worked;
Blueprints and Photostats;
Telephone and Telegraph;
Travel;
Fees Paid;
Miscellaneous.

General Journal and General Ledger. The General Journal is used to record adjusting and closing entries for transfer to accounts in the General Ledger. The General Ledger contains individual sheets comprising detail of assets, liabilities, capital accounts, and income and expenses, each broken down into their respective categories.

Billing Record. This is a memorandum of all bills sent out showing date, to whom billed, job number, remarks, date paid.

A system such as outlined above will adequately serve most offices—whether small, medium or large. The more active the firm, the more important it is to know all costs in connection with jobs, direct as well as indirect, in as much detail as possible. While technical salaries spent on an individual job are an important factor in budgeting future jobs, actual *hours* worked are of importance, as well. Average wages in an office will vary from time to time, so unless a record is kept of hours the salary figure will hold little meaning.

A young architect starting out in business, doing much of the work himself, may feel that a system such as the one which has been discussed may be too extravagant for his purposes. In this event, a minimum system, providing only the barest of records (such as the Cash Journal) will serve his needs, and will serve equally well the architect whose only interest is a gain or loss as a complete operation.

Such a minimum system would not show much detail concerning individual job experiences. However, a loose leaf form of record providing a page for each job *should* be kept. This record could be used to show all essential information: e.g., name of client, address, description of project, date authorized to proceed, pertinent details of agreement. In addition, it should show the total number of hours spent by the architect in doing the work, as well as all incidental expenses he may have incurred on behalf of this job, such as typing fees, blueprints, etc. It would naturally also show the total income including reimbursal of expenses. The record of his time will enable him to prepare budgets for other jobs of a similar nature.

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* *Architect, Office Manager for Mayer & Whittlesey, Architects, New York, N. Y.*
** *Senior Accountant.*

Bernard Tomson

it's the law

An architect retained by a builder who commences construction despite the imminence of changes in the zoning laws should inform his client that he acts at his peril. The builder is in a particularly hazardous position where the work is begun before he has obtained a building permit covering the entire structure. A recent case in New York (*Riverdale Community Planning Assn.* v. *Crinnion*, New York Law Journal, July 8, 1954, page 3) highlights this problem.

In the Riverdale case, the builder acquired title to certain property in early 1953, intending to erect an apartment house. The apartment was to be erected in the Riverdale area of New York City, which was at that time predominantly a one-family residential section. He engaged architects and engineers, proceeded to make test borings and made a topographical survey of the site.

In November 1953, the Planning Commission of New York City held hearings for the purpose of amending the zoning ordinance to prohibit the further erection of apartment houses. In December 1953, the builder was granted an excavation permit and in early January 1954, he was issued a foundation permit. These permits authorized work to begin, pending issuance of a building permit for the entire structure, which would have been issued upon final approval of all plans. The proposed zoning change prohibiting the further construction of apartment dwellings was adopted and became effective on January 14, 1954.

Between the time the builder had obtained an excavation permit and a foundation permit and the date the change in the zoning law became effective, the builder had completely excavated the property but had not poured foundation concrete or done any other foundation work in any substantial degree. The question presented to the Court was whether the change in the zoning law applied to the project in question, thereby prohibiting its completion, or whether the builder had such a "vested right" in the project that the change in the zoning law could not be constitutionally applied.

The Court ruled that the builder could not proceed because the work which had been performed prior to the change in the zoning ordinance did not represent a substantial part of the structure and, therefore, did not create a "vested right."

The Court, in its decision, was influenced not only by the fact that the builder had not obtained a final building permit at the time of the change in the law but also by the fact that he had not completed the foundation. The Court stated:

". . . even if it be held that all the claimed excavation work had been done, it cannot be held that any part of the foundation work was completed, as no concrete had been poured . . . The builder is, therefore, not in the position of having substantially performed to the extent allowable under the permits held. Without substantially completing the foundations it cannot be held that any substantial part of these structures of approximately ten-story apartment houses with connecting garage had been built."

The courts will often consider surrounding circumstances in determining whether a builder has that type of "vested right" which will preclude the applicability of a zoning ordinance change to the project which he is constructing. Some courts will consider as a factor the expenses incurred by the builder prior to the change in the zoning ordinance. However, the courts look with suspicion upon the claim of hardship by a builder where he has incurred expenses despite his knowledge of the imminence of a change in the zoning laws.

In a recent Connecticut case (*Graham Corp.* v. *Board of Zoning Appeals, Town of Greenwich*, 140 Conn. 1) the builder, despite opposition of adjacent land owners, succeeded in obtaining an excavation permit and foundation permit for the construction of a building. Within two days, with the use of power shovels, the builder excavated the land and poured concrete footings. The adjacent land owners appealed the issuance of the permits on the third day following their issuance. The builder contended that, by excavating the land and by pouring concrete footings, he had obtained a "vested right" in the project which would preclude the adjacent land owners from questioning the propriety of the issuance of the permits. The builder further asserted that he had incurred great expense in commencing the work and that it would be inequitable to withdraw the permits.

The Court rejected the argument of the builder, ruling that the building was not substantially in the course of construction and, therefore, no "vested right" of the builder had been created. The Court, in pointing out that the expenditure of the builder was hurriedly incurred over a two-day period when he knew that the issuance of the permits would be challenged, stated:

"When, then, the foundation permit was issued under date of October 27, the plaintiff doubtless expected, in view of its past experience, that the opposition would seek a review of the inspector's action; anything which the plaintiff accomplished on Saturday and Sunday, October 27 and 28, in excavating the land with the use of power shovels and in pouring concrete footings did not bring the building to the point where it was 'substantially in the course of construction,' as mentioned in the rule. Nor does the hurried incurring of expenditures on the two days mentioned commend itself to any equitable consideration. The difficulty in which the plaintiff finds itself on this matter of expense was one of its own deliberate choice."

The foregoing cases are illustrative of the dangers of proceeding with construction where there are strong pressures for a change in the zoning law and such a change is imminent. Commencement of construction without the issuance of a building permit is particularly risky, even though excavation and foundation permits have been obtained. A builder cannot always protect himself from a change in the zoning law by commencing or continuing construction as quickly and as fast as possible prior to such change. Whether he may continue with the construction will depend upon whether a "vested right" to do so has been created, and the existence of such a right is a question of factual determination which differs in each situation (*See* IT'S THE LAW, *May 1954 P/A*).

the search for form

*"The ideal of an architecture in which utility and structure are integrated to produce expressive form has been perennial among theoreticians, but, since architecture is governed by heart as well as mind, logical principles have on occasion given way before emotional fervor."**

Truly great architecture of every period has always gone well beyond the basic integration of utility and structure to emerge in a convincing and beautiful "expressive form." In this second of our year's issues built around "the production of architecture," we focus on a group of buildings and design elements that seem to us to approach the ideal in this perennial "search for form."

How varied are the results when different designers, with widely varying talents, are commissioned to design a bank or a school or any other structure. How boldly contrasting are the statements that some of the great of our time—Frank Lloyd Wright, Le Corbusier, and Mies van der Rohe, for example—have made as a result of their conscious experimentation with form expression. And how necessary and inspiring this has been in the light of the comfortable conventions to which so many subscribed in the early part of this century.

Today, happily, an expression appropriate to our time seems to be nearing realization, as more and more architects approach maturity in their design convictions and affirmations. Among them, surely Alden B. Dow and Eero Saarinen, work from both of whose offices is shown on subsequent pages, have been notable in consistently producing imaginative and progressive architecture. But their palettes are quite different, and there is nothing of conventional stylism about their buildings. In the work of both, however, one senses and finds, not only the integration of function and structure, but also creative form, sensitive scale, a human quality, honesty, and humility—ingredients essential to beauty and that, combined, produce true architecture.

However, to an architectural audience, simply visual proof that the search for expressive form has been successful is not enough. How did the architect arrive at his solution? What were the impelling concepts; how were these translated into the production of working drawings; what details of structure or function of space had to be fused into the finished form? On the pages that follow are a study of the methods of operation in the Dow office, and a study of elements of design—even such details as stairs—that were integrated in a major work from the Saarinen office.

* The Architect at Mid-Century—Evolution and Achievement. *Volume I of the Report of the Commission for the Survey of Education and Registration of the American Institute of Architects* (Reinhold, 1954).

Alden Dow surrounded by his office force.

the architect ...

Alden B. Dow: Midland, Michigan

The work of Alden B. Dow, one of the very few architects who has both great design talent and a highly personal concept of architecture, consistently bears the marks of originality and distinction. Knowing something of Dow's background, his thinking, and how he works, sheds light on why and how this remarkably individual architecture comes into being.

Dow has been in and around Midland, Michigan—now a town of some 25,000 residents—for the better part of his life. He was born in Midland; attended the Midland public schools; married a Midland girl; and established his office there. His father, Chemical Engineer Herbert Henry Dow, founded Midland's great industry, The Dow Chemical Company.

Excursions away from home included three years at the University of Michigan Engineering School, and study at Columbia University, where he received his Bachelor of Architecture degree in 1931. The summer of 1933 he spent with Frank Lloyd Wright, returning in the fall of that year to establish his own office. During the war, he opened a branch office in Houston, Texas, and designed and built the Lake Jackson area, near Freeport, 60 miles south of Houston.

Dow has always been active in professional organizations and currently is a member of the Michigan Society of Architects (Past President); the Saginaw Valley Chapter, AIA (Past President); the National Council of Architectural Registration Boards; and the Michigan Engineering Society.

philosophy

Dow feels that "the real objective of architecture should be to inspire constructive creativeness in those that use our buildings. This means that our buildings must aim for something more than pure utility. Just as important, and at times even more so, is compatibility. By this, I mean that the building, in addition to serving its fundamental purpose, must also be compatible with its surroundings, the ground it's built on, the planting, the people that pass by, the automobile, and, finally, the individual person." Similarly, he argues, the parts of the structure must be compatible: ". . . the exterior, part of the interior; one space, part of another space. Only through this point of view can a building become part of the people that use it, a path for their inner growth."

Some of the subtler interrelationships of spaces and forms, the harmony of textures, the almost invariable inclusion of growing plants inside the building, and the attractive glazed elements framing outdoor views that one finds in Dow's work, undoubtedly are attributable to his constant effort to reach these goals.

"Too often our buildings are forced into a preconceived form," Dow maintains. "This seems to be done in the name of style and always results in an artificial expression. As I see it, style is a process pattern and exists no matter what you do. But fine style, real character, develops only when you have an objective beyond the obvious utilitarian requirements of the building . . . Without this inspired point of view, your building is not being constructively creative; on the contrary, it is forming a future slum. The tragedy of our architecture today is that we are not following this attitude, and for this reason, 90 percent of our buildings should never have been built."

Among other exceptional things about Dow, he has drawn up at least three criteria for judging the quality of his own work, as well as that of others. Without some such basis, he feels, the architect "is at sea without a compass."

Briefly stated, these are:

"First, is it honest? Is it genuine or artificial?" But he cautions against confusing sincerity with honesty. "A child, because of his sincerity, may produce a charming thing, but this is not enough for a mature artist. If honesty is lacking, we need not look further, because all

"A building must have honesty."

"A building must have humility."

Main Street, Midland. The trees that line the street were planted eight years ago. "These trees on Main Street have done more for the town than almost any other one thing to improve its character," says Dow. "I am convinced that no matter what you do with buildings on a main street, it will still be unpleasant without trees. Trees are the only way to convert an otherwise monotonous line of buildings into a pleasant avenue."

... his community

other qualities depend upon this as a foundation."

Satisfied that a design possesses this fundamental quality, the next thing he looks for is "humility," a word that Webster suggests as meaning "a condition without arrogance or self-assertion."

"Let us call it the ability to give and take gracefully," comments Dow. "It is the quality that makes people part of a building and vice versa. It is related to the quality we call scale of a building. It is the quality that makes a bouquet contribute to the table it sits on, and in turn, the table contribute to the bouquet. It is the quality that makes one part recognize another part."

And finally, a characteristic he feels to be essential to any good thing, good architecture included, is "enthusiasm." This, he avers, is "the real life-giving property. Without it a young lady may be pretty, but never beautiful. It is the relishment of living—the quality that makes a building more than a box. It is the richness of flavor . . . the counterpoint in music . . . the variety of facets . . . the depth of conception."

Wherever these three qualities—honesty, humility and enthusiasm—are found working together, adds Dow, "you will find a thing of beauty and something to be valued. In the search for these qualities bound together in a whole thing. I find my greatest enjoyment."

the office

Dow's professional staff consists of thirteen men and three women. Commissions have been steadily increasing over the years, Dow reveals, and present volume is "about $5 millions a year."

In the majority of cases, the general design and philosophy of a building originates with Dow himself. It then proceeds to M. C. Allison, who is a registered architect. "I follow all work through the office," Dow tells us, "taking particular pains to see that we take advantage of the structure as architecture, or vice versa. By the time working drawings are completed, I can sketch from memory the appearance of any part of a building." The office takes pride in quality of draftsmanship and completeness of drawings.

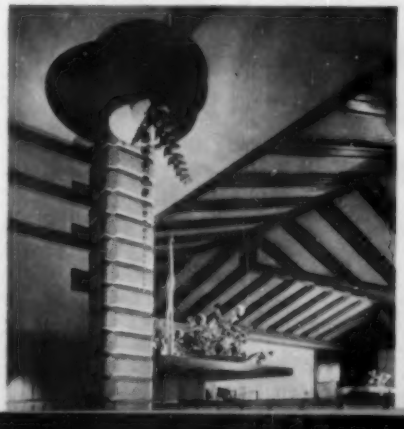
Dow specifications are handled by Willard Fraser, also a registered architect and "a capable structural and mechanical critic." All building-progress statements go through Fraser, and the field superintendent, George Austin, an experienced builder, keeps a critical eye on all work. Janice McKee does the bookkeeping, a side of the office that is "handled as a corporation. All income to the architect for services is turned over to this corporation. . . . We do this purely for bookkeeping purposes. At the end of each year, a percentage of the profits is given to the employes." Mechanical engineering for the firm is handled by Hyde & Bobbio, of Detroit, while large structural-engineering problems are the work of Robert J. Davis, also of Detroit.

The practice includes all sorts of buildings—laboratories, office buildings, shops, banks, churches, hospitals, schools, libraries, houses. And the firm has developed two types of prefabricated houses. As to the problem of convincing clients, Dow is succinct. "If I have an idea good enough to tickle the imagination of the client, I find little difficulty in selling it."

envoi

As a sort of summary of his philosophy and advice to the younger man, Dow says: "Never build a building unless you feel you have a superior solution. Otherwise, you are digging your own grave. You will soon be eaten away by chiseling competition. On the other hand, positive creative effort can only end in a prosperous and happy result for all. Never consider yourself a specialist in any particular kind of building; for as sure as you do, your thinking will be reduced to a formula, and this, by its very nature, means sterility."

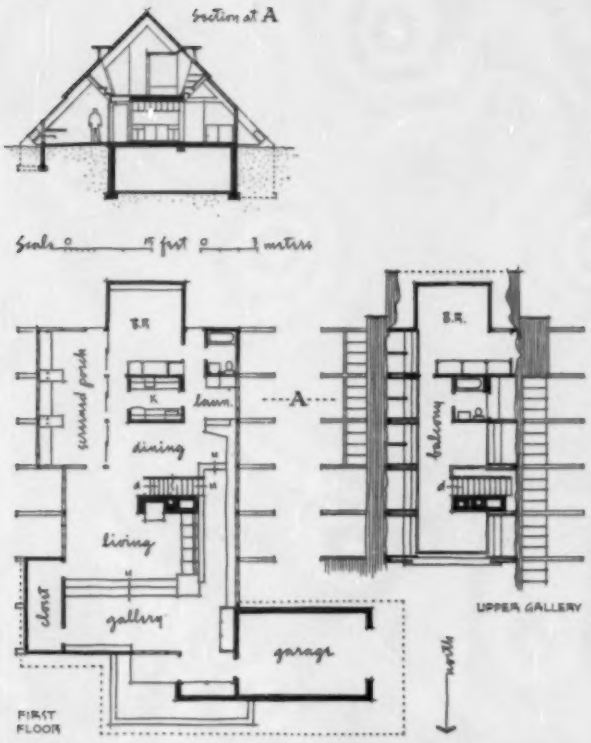
"A building must have enthusiasm."



Dow feels that the three qualities symbolized by the photos he selected from his own work (bottom, both pages) *are essential to good architecture. Illustrating "honesty" is the dining area of the Saxton house, Flint, Michigan; "humility"—his own combined home and office in Midland; and "enthusiasm"—a detail in the Dow home.* Photos: Hedrich-Blessing

house

Josephine Ashmun, the owner of this home in Midland, refers to it as her "timber teepee." At one point during construction, she baffled friends by reporting that the roof was on and the second floor in place, but there were no walls! Mrs. Ashmun is a musician and uses the brick gallery that occurs three steps above the living-room level as a sort of stage for the piano. Much of the unique charm of the house derives from the ingenious way in which the second floor is suspended from the rafters on plywood gusset hangars, providing open balcony areas and see-through portions that give the effect of a house within a house, floating in space. The house is framed with 6" x 18" wood rafters, spaced 8 ft on centers; the decking is of 4" x 4" plank, all left exposed, the structure becoming architecture. Exterior walls are cedar; interior, fir.



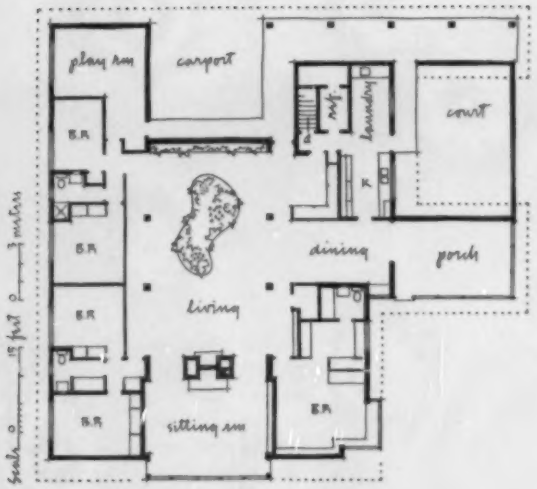
The giant rafters extend beyond the envelope to supporting concrete buttresses. To skylight the gallery and screened porch, portions of the roof are glazed. Floorings are either brick or cork, and the house is heated by a radiant system, employing copper coils.

the architect and his community: Alden B. Dow

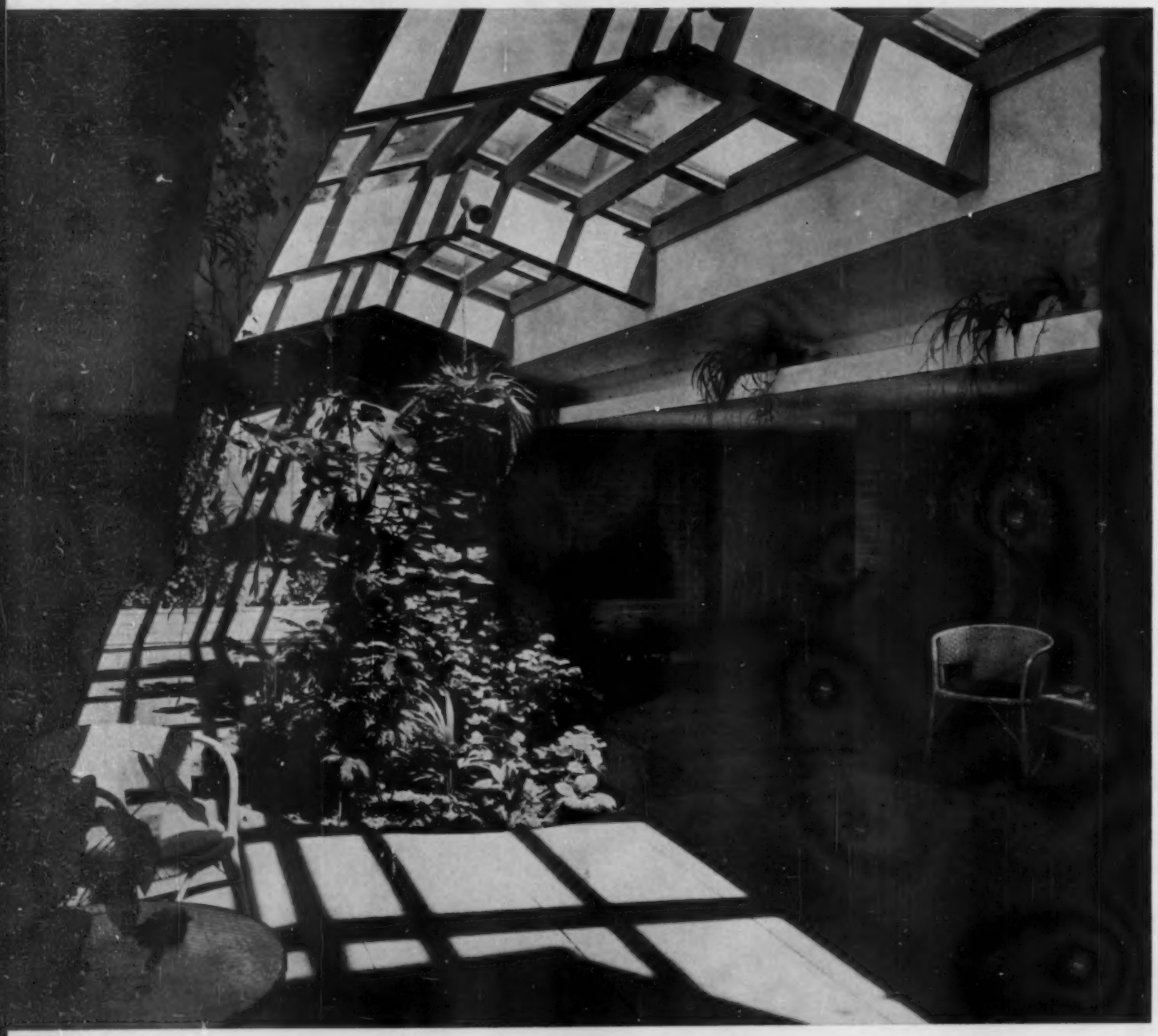
Sliding doors open the dining room, kitchen, and ground-floor bedroom to the screened porch (acrosspage), *with its built-in wood seating and tables. On the balcony* (right), *the far end overlooks the piano gallery while openings with linoleum-topped shelves (right of photo) allow glimpses of the living area.*

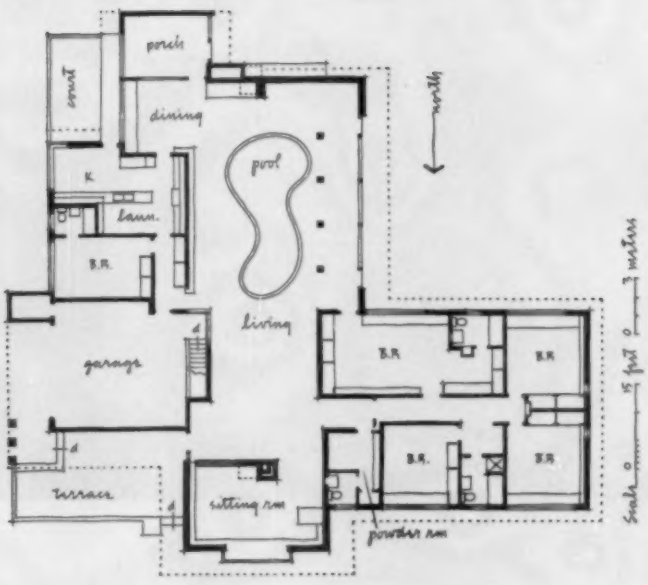
Stairs to the balcony border the brick chimney wall of the dining room. The living-room gallery (right) *is also the entrance area, and a door at one side opens to the garage.*

the architect and his community: Alden B. Dow



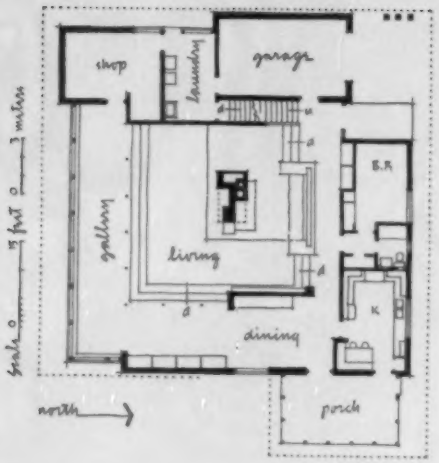
living-hall with planting area: *The Robert S. Ballmer house backs up to a Midland golf course, with the family sitting room overlooking a fairway. To accommodate a major hobby—gardening—the house is planned around this skylighted, indoor patio, which also serves as entrance hall and lounging and entertaining space. Encased, steel, bent beams support the skylight.*



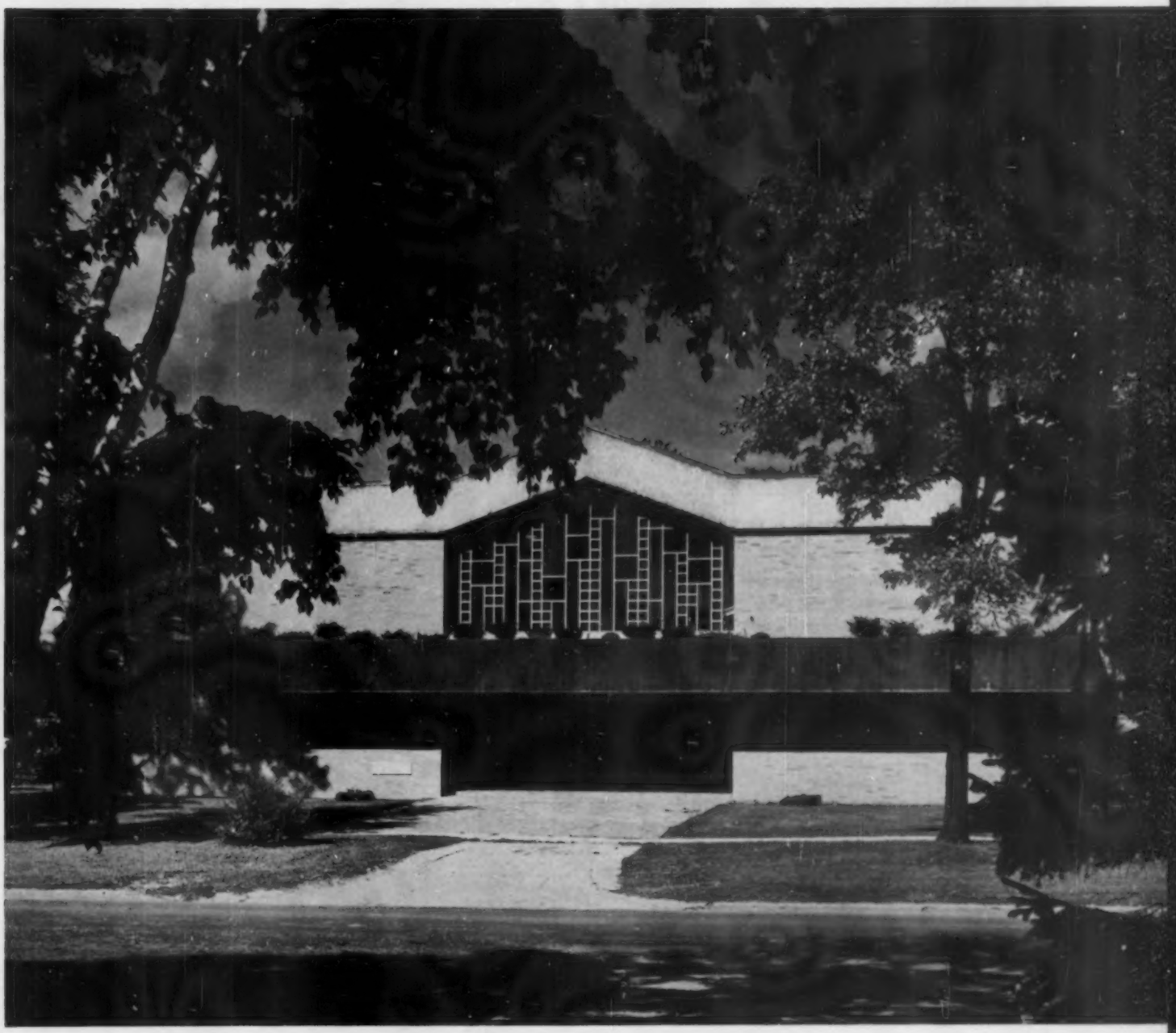


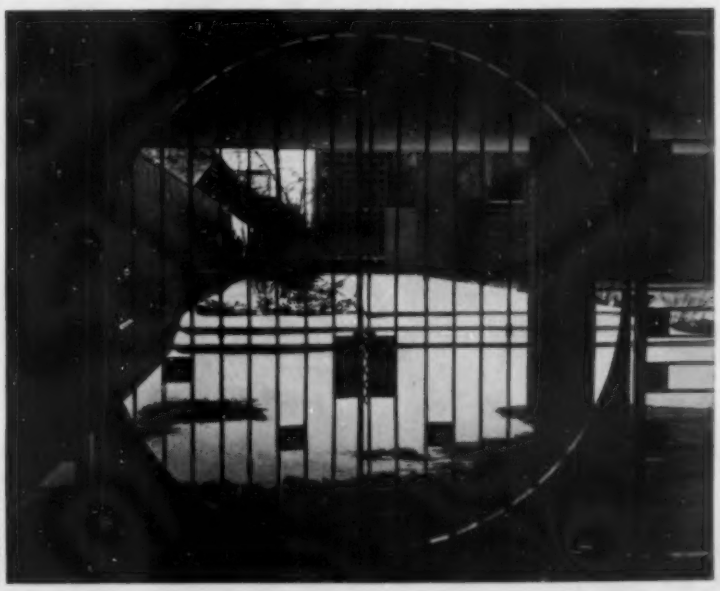
living room with swimming pool: *The skylighted area of the Thomas Defoe house, Bay City, Michigan, focuses on a free-form, indoor swimming pool, approximately 20 ft in length and varying from 6 to 13 ft in width. The area adjoins and more than doubles the size of the more conventional "living room" space. Conversational groupings and plants are arranged on the curb and brick-floored area surrounding the pool. The architect tells us that this unconventional scheme has proved "highly satisfactory."*

the architect and his community: Alden B. Dow



galleried living room: *From the photograph and ground-floor plan of the R. B. Bennett house, Midland, one would hardly suspect how large a house this is. For, on a practically square second floor, above the center of the ground floor, are four more bedrooms, two baths, and a commodious dressing room. The window-walled, brick-paved gallery occurs along two sides of the sunken living room and commands a fine view across an adjoining golf course.*





James J. Dion

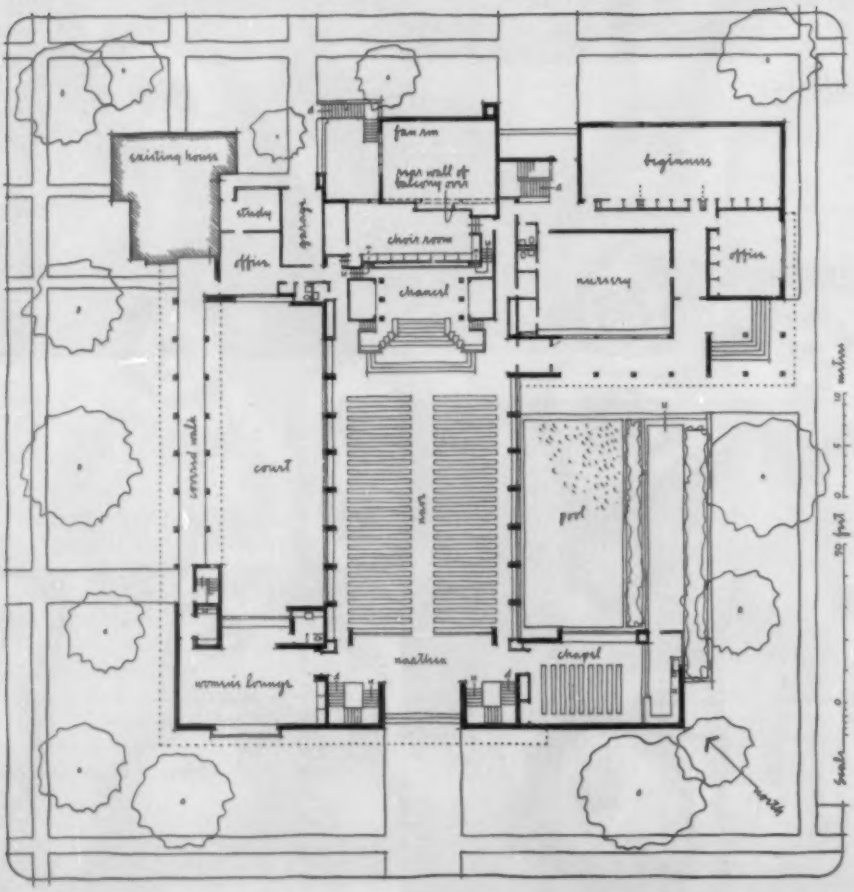
church

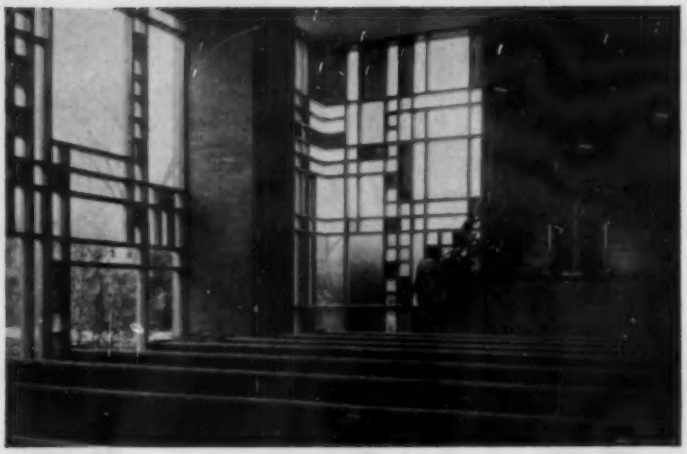
In designing the First Methodist Church of Midland, Dow searched for a form and esthetic that would inspire "growth beyond ourselves." Hence, the glass entrance way, the openness of the sanctuary, the windows overlooking garden courts and pool, and the skylight above the altar. From gates in the southeast wing (left), *one looks across a landscaped courtyard to the chapel, erected in memory of the architect's parents. The steel-framed structure has walls of glass or of brick with masonry back-up.*

the architect and his community: Alden B. Dow

James J. Dion

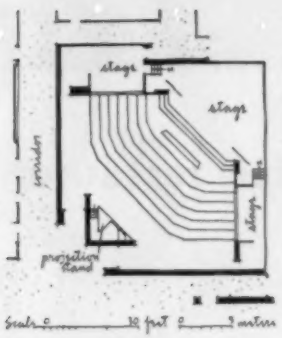
In the basement are a kitchen and an assembly room with a capacity of 560 persons seated at tables, 21 rooms to serve the Sunday School, and various utility rooms. Looking across the pool courtyard (right), *one glimpses the chapel (left of photo) and windowed side wall of the nave* (right).



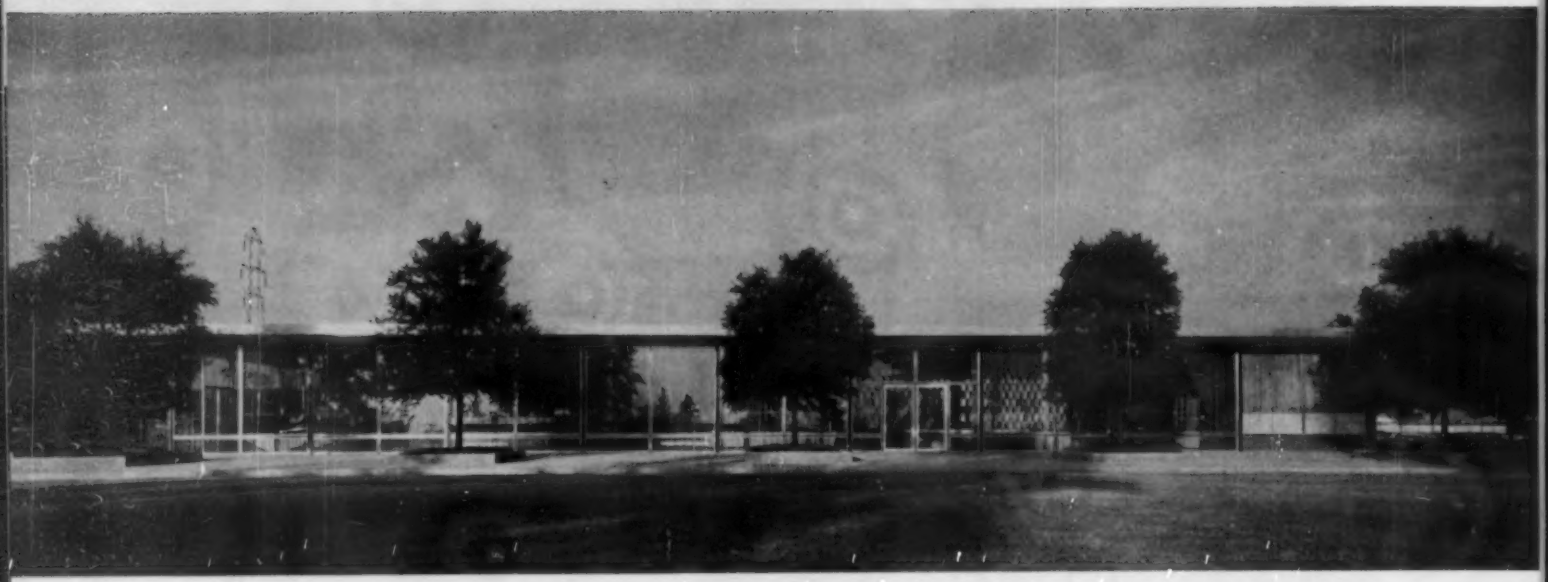


The skylight above the altar (top) *"replaces the steeple and adds the meaning of striving for infinite growth." In the chapel* (left) *which seats 100, the 10-in.-square colored-glass panes may, in due course, be replaced with panels designed by church members themselves—one of the elements worked out to stimulate individual creativeness. Balconies at either side of the nave* (below) *are used for processions of the choir.*

High School Elements

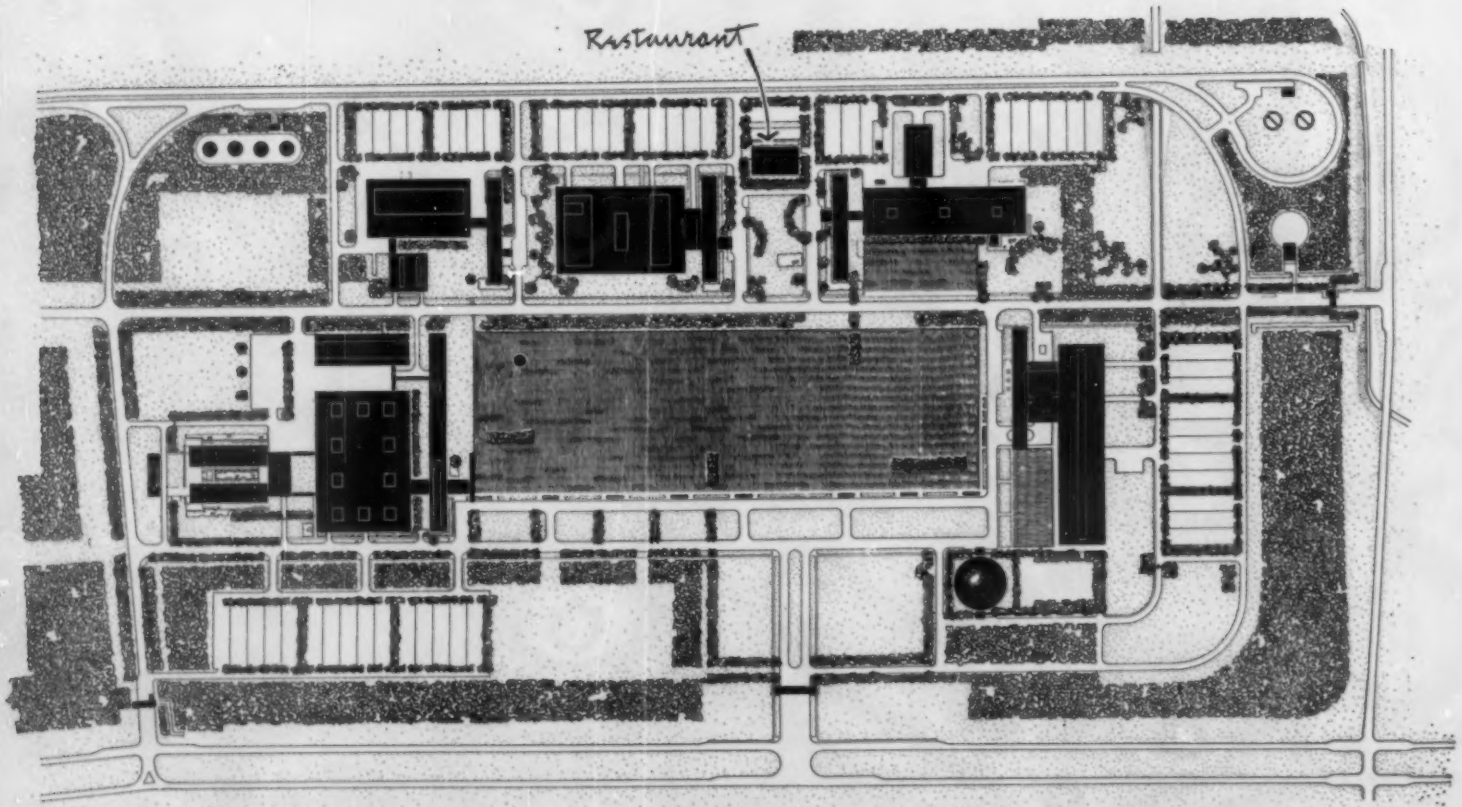


Two of the most interesting areas of this 800-student school are the theater (acrosspage) *and locker corridor* (below). *As the theater plan shows, small side stages allow considerable flexibility in the use of the space, with the main seating arranged on the diagonal of a basically square room. Above the flush-mounted coat lockers bordering the corridor walls of classrooms, clear glass extends to the ceiling. The exterior of the building is less interesting than it might have been since a covered walk leading from the drive to the main entrance was eliminated, not because it exceeded the budget, Dow tells us, but because the school board felt that the taxpayers would regard it as an extravagance. "It was a very necessary part of the design," the architect comments.*

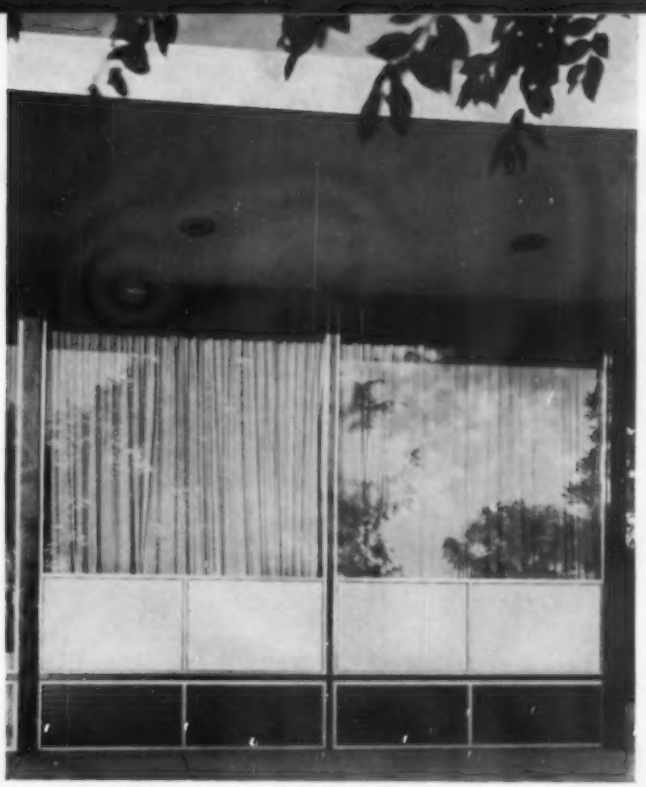


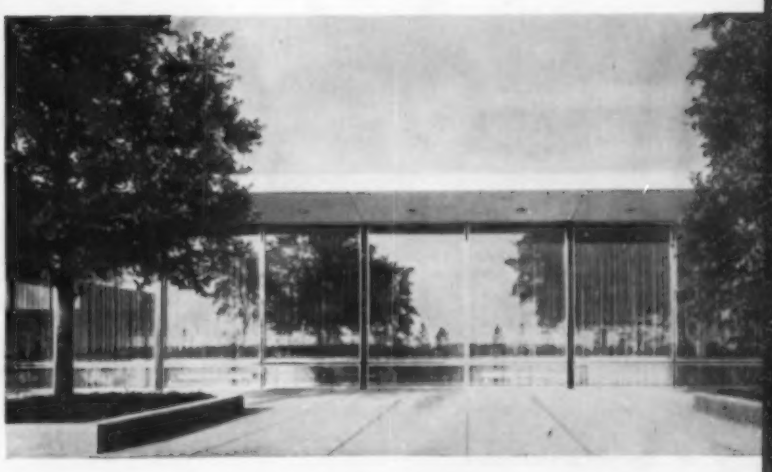
General Motors technical center: restaurant building

The restaurant closes the east end of a court, flanked by the Engineering and Process Development buildings. In contrast to the "automobile" scale of the project elsewhere, this court is intended for the pedestrian.



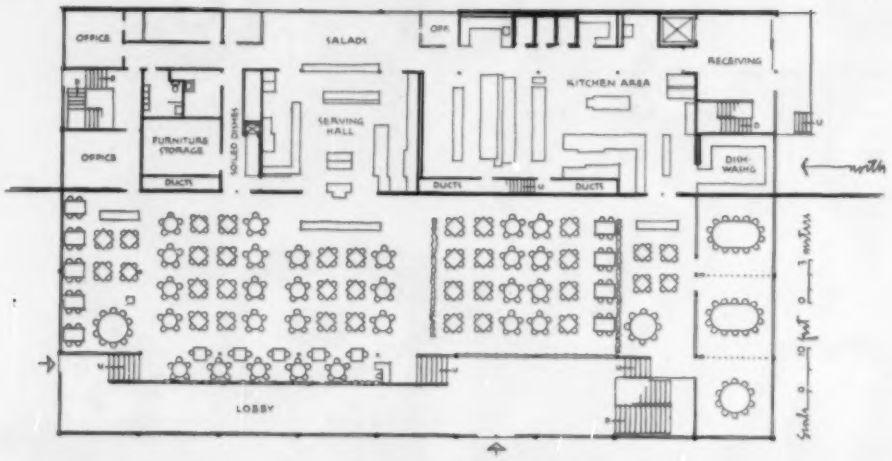
architects	Eero Saarinen & Associates
architects-engineers	Smith, Hinchman & Grylls, Inc.
general contractor	Bryant & Detwiler Co.

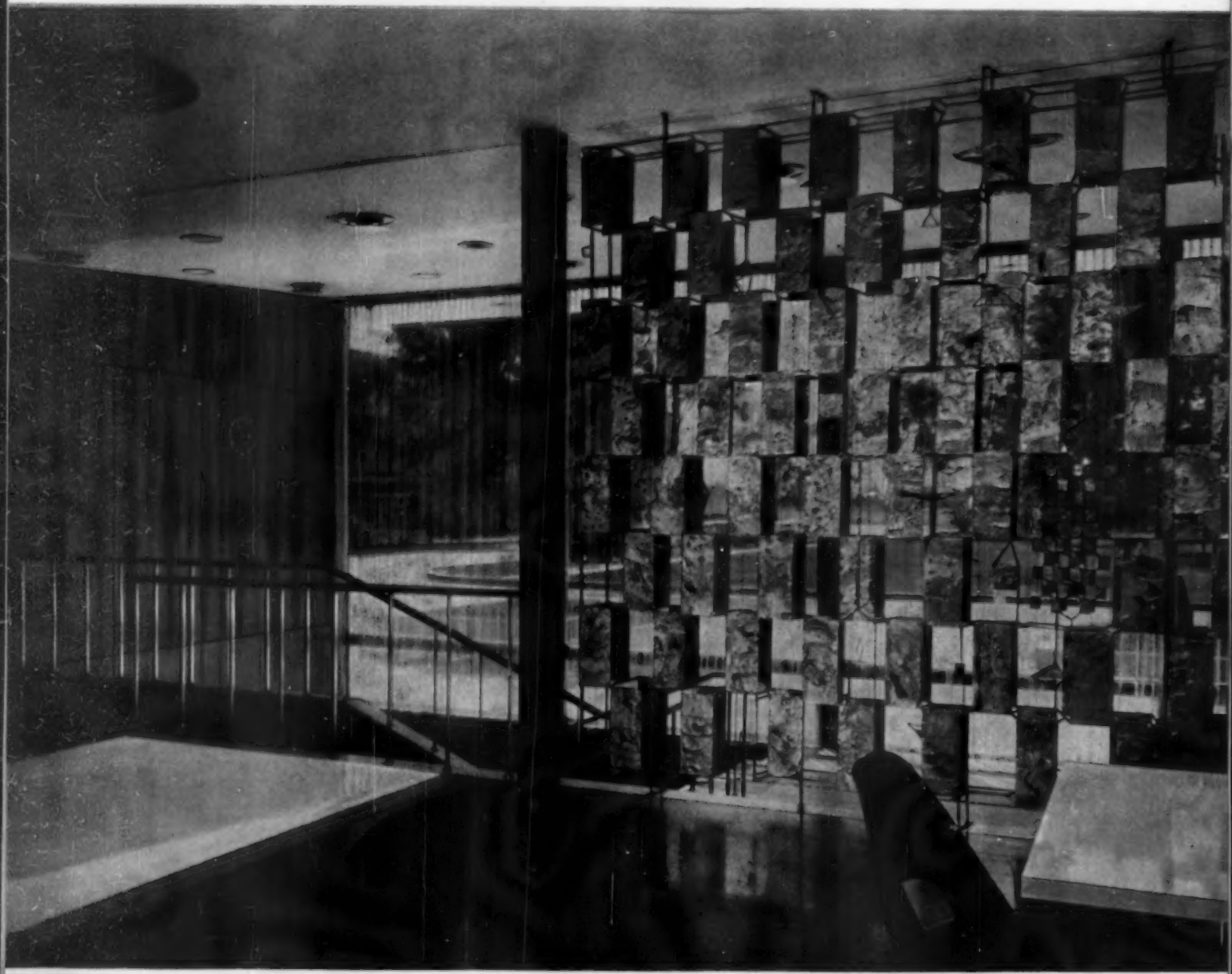




The building has a metal-deck roof with wide overhang. Detail of window wall (top right) *at west elevation, makes a handsome composition of metal louvers, porcelain-faced insulated panels, and glass set into extruded-aluminum frames within the structural steel module, spaced 18′ on centers.*

General Motors technical center: restaurant building





Dining area is raised for better view. Floor at entrance level (left) *is Roman travertine; at dining level, black terrazzo. Stairs* (foreground of photo at left) *lead up to executives' dining rooms* (below) *and down to basement, which contains mechanical equipment, additional kitchen facilities, locker rooms, and an underground pedestrian tunnel connecting with other buildings.*

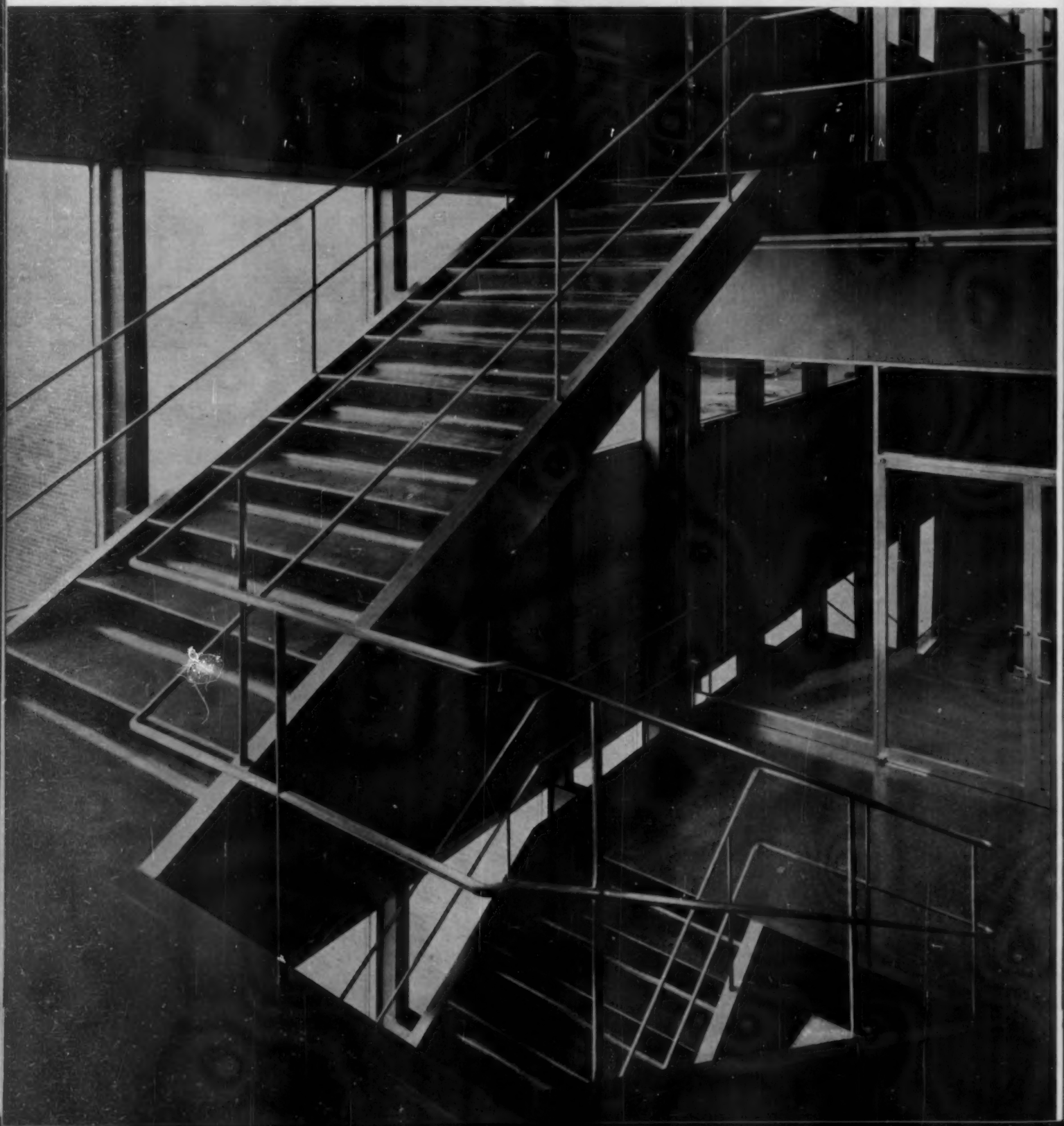
Serving area (above) *is centrally located for main dining room* (right). *Brazilian wood panels on the east wall are a rich brown, streaked with black. The ceiling is white, mineral, acoustic tile.*

The architects have not only achieved a building which, despite a functional difference, is in harmony with the Technical Center, but also have succeeded in creating a most sensitive and restrained architectural space which provides an appropriate atmosphere for pleasant dining. In contrast to the other parts of the Center, the restaurant has no strong accents or colors. Exterior materials are glass and black-and-dark-olive-green glazed brick. Insulated porcelain-faced panels are set into a finely proportioned framework of steel. The whole interior color scheme is carefully controlled, ranging between light tones and rich dark tones. The only color accents are the green plants and yellow curtains in the executives' dining rooms. To give diners a better view over the lake and its fountains, the dining area is raised. A decorative rather than structural screen (*color photo acrosspage*) by Sculptor Bertoia, serves to separate the entrance from the raised dining area. The screen (*a similar one is discussed in more detail on page 104*) adds a particular richness to this building, which in all its parts is a superb architectural symbol of 20th century technology.

General Motors technical center: design elements

The three stairs shown here might be taken as symbols of the thought and care in design which were expended on every detail of the G.M. Technical Center.

In the Engineering Building (*below*), there was no intention of making an ornamental stair but simply of providing a utility staircase, whose beauty would derive from refinement of proportions and detail.



engineering building stairs

Section at Landing 3/4" SCALE

7/8" 10 GA. ST. STEEL TUBING

FLOOR LINE

12"I

8 WF

WELDED L

12"I STRINGER

FLOOR OF LANDING

12"I

8 WF

WELDED L

3/4" ACOUSTIC TILE

1/2" RESILIENT TERRAZZO

REINFORCED CONCRETE

Stairway Section

1/8" SCALE

LANDING

Stringer Section

3" SCALE

LEAD FILLED 15/16" HOLE

WELDED

3/4" x 2" x 4" STEEL BLOCK

7/8" ROUND 10 GA. ST. STEEL TUBING

RESILIENT TERRAZZO

1" RAD.

WELDED

REINFORCED CONCRETE

12" x 3" I STRINGER

1/4" x 2" x 10" STRAP ANCHORS 2'-0" O.C.

ACOUSTIC TILE

WELDED U CLIPS

WALL

LANDING

D

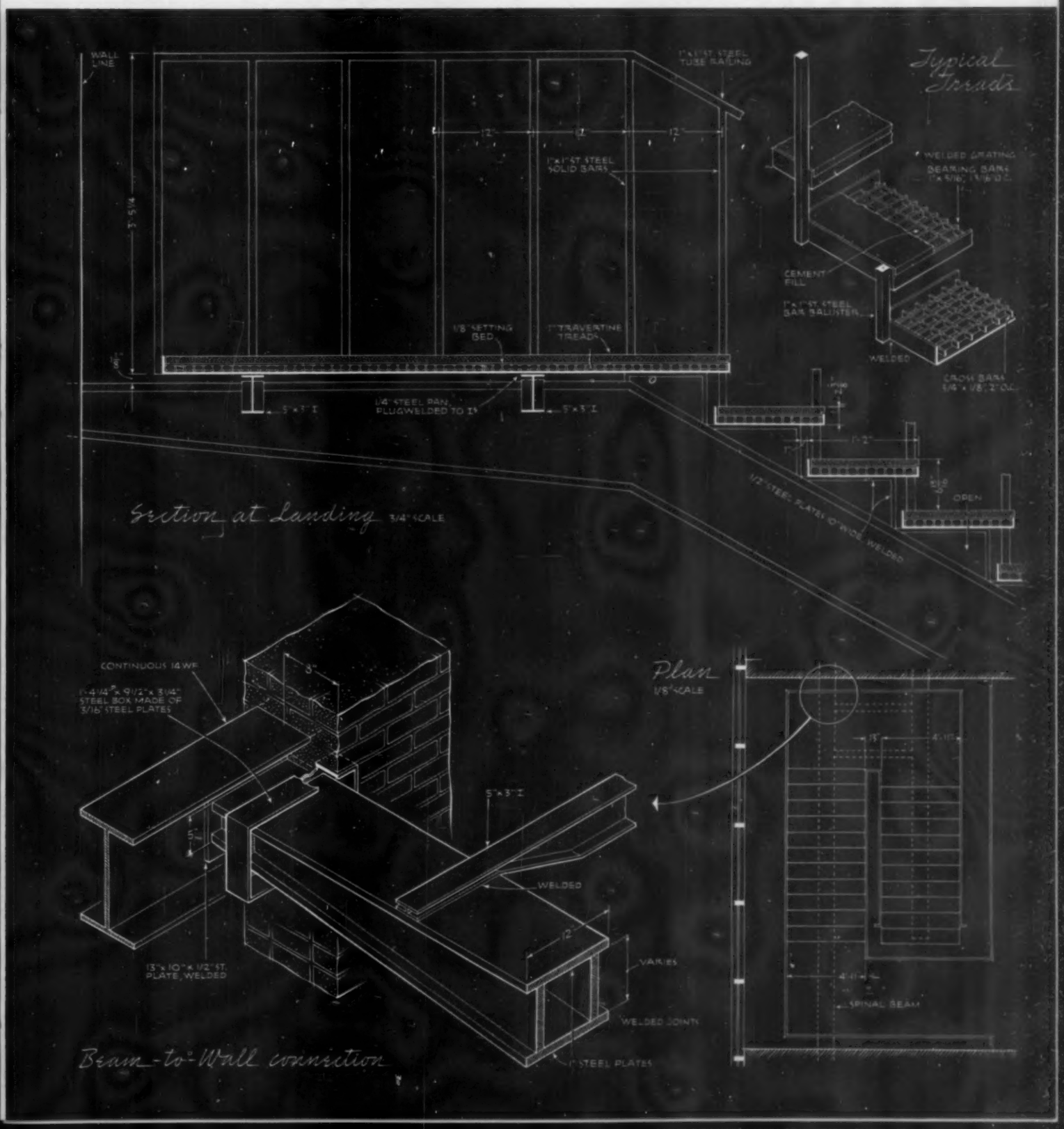
Plan

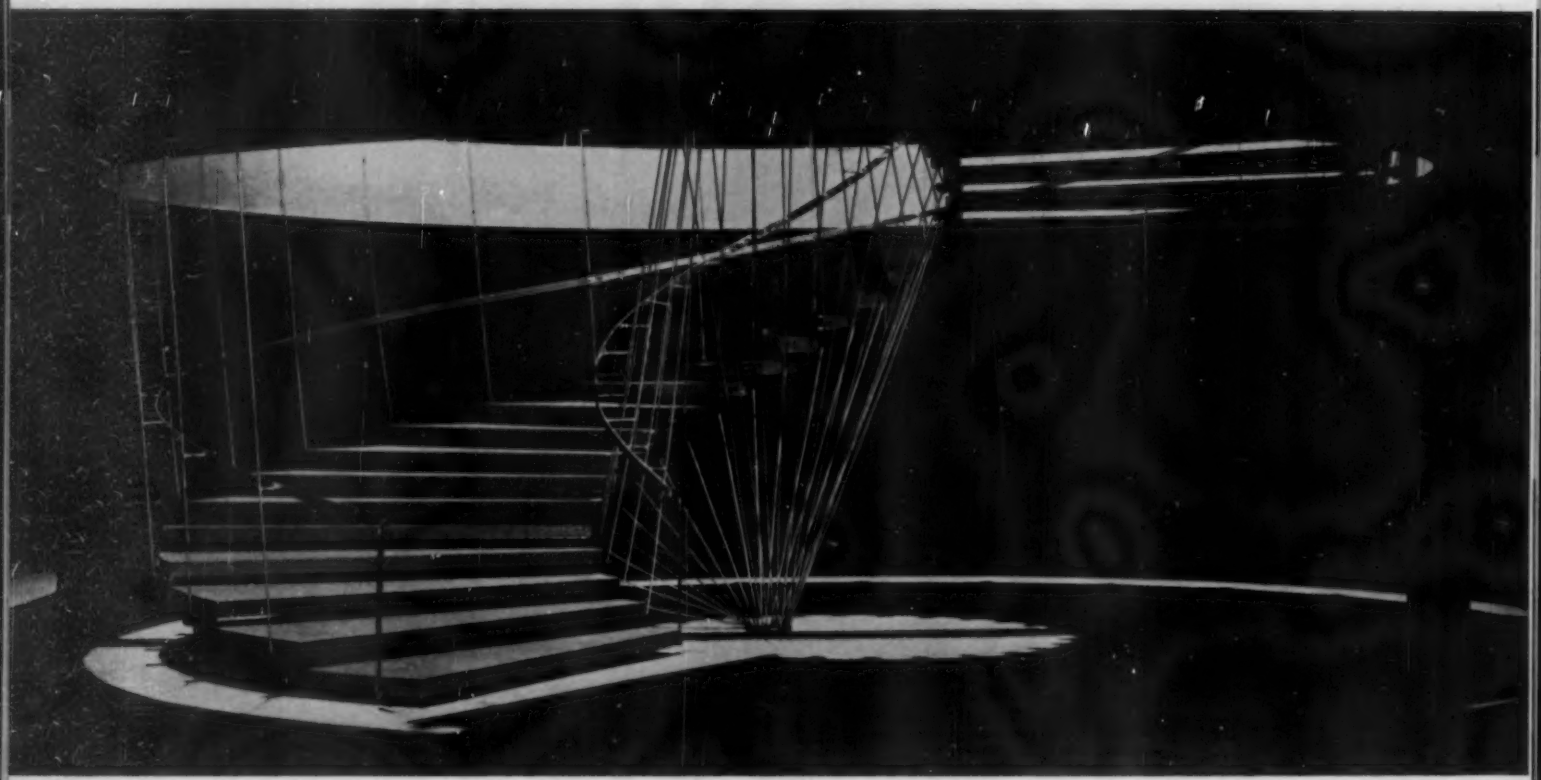
1/8" SCALE

General Motors technical center: design elements

In the Service Center, however, since the stair was on the axis of the entrance and would be seen in silhouette against the glass wall behind it, the architects decided to make it more open and ornamental. They decided on what they call "a spine kind of thing," with a single, central beam supporting the open risers. This was the first place in the project in which the architects ventured beyond routine materials (the steps, for instance, are of travertine) and persuaded the clients to accept the less usual, open riser arrangement.

service building stairs





research building stairs

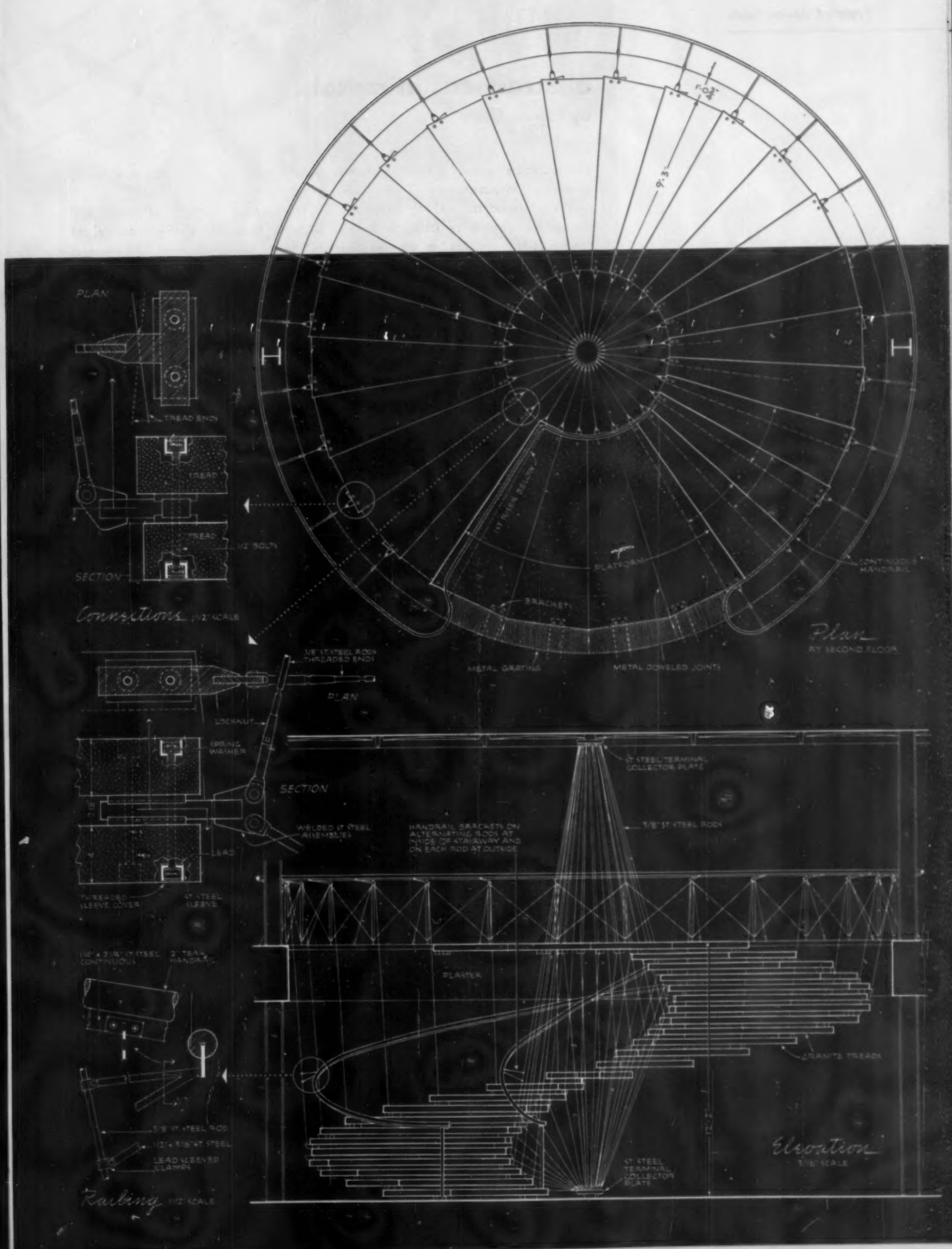
In the Research Building, the stair was a matter of special significance. Not only was it the stair for the largest group of buildings, but it was also to be a visual climax to the lobby, set in the interior space beyond the projecting glass-enclosed entrance area. In a sense, it was to act as a large-scale sculpture.

Solid-block schemes were discarded as being more appropriate to massive, historical architecture. "Spine-type" schemes were rejected as being too monolithic for this situation. Instead, a scheme was sought which would be sympathetic esthetically with thin-skeleton construction and which would work with this type of construction, in which there are only random points of support. The right solution, therefore, seemed to be one in which the stair could be pulled between one beam above and one beam below.

The stair thus consists of steps virtually floating in space held from above and below by stainless-steel suspension rods. Lateral stability is achieved both by sheer blocks placed between the steps and by the compression ring created in the staircase by the tension rods (acting like spokes in a bicycle wheel).

The Research Stair represents a beautifully thought-out and thoroughly investigated architectural problem. The question of the best possible hardware manufacture for the many pieces of polished, stainless steel involved was studied. Materials for the treads were tested for compression and tension as well as examined for their visual effect and finally an emerald green granite was selected. Handrails will be of teak.

Photos (except above): Hube Henry; Hedrich-Blessing


PLAN
TREAD ENDS
TREAD
TREAD
1/2" BOLTS
SECTION
Connections 1/2" SCALE
5/8" ST. STEEL RODS THREADED ENDS
PLAN
LOCKNUT
SPRING WASHER
SECTION
LEAD
THREADED SLEEVE COVER
ST. STEEL SLEEVE
WELDED ST. STEEL ASSEMBLIES
HANDRAIL BRACKETS ON ALTERNATING RODS AT INSIDE OF STAIRWAY AND ON EACH ROD AT OUTSIDE
ST. STEEL TERMINAL COLLECTOR PLATE
5/8" ST. STEEL RODS
PLASTER
GRANITE TREADS
ST. STEEL TERMINAL COLLECTOR PLATE
Elevation
3/8" SCALE
5/8" ST. STEEL ROD
LEAD SLEEVED CLAMPS
Railing 1/2" SCALE
H
H
9'3"
ST. RODS BELOW
PLATFORM
BRACKET
CONTINUOUS HANDRAIL
Plan
AT SECOND FLOOR
METAL GRATING
METAL DOWELED JOINTS

abstractions in metal

by Eugene Clute

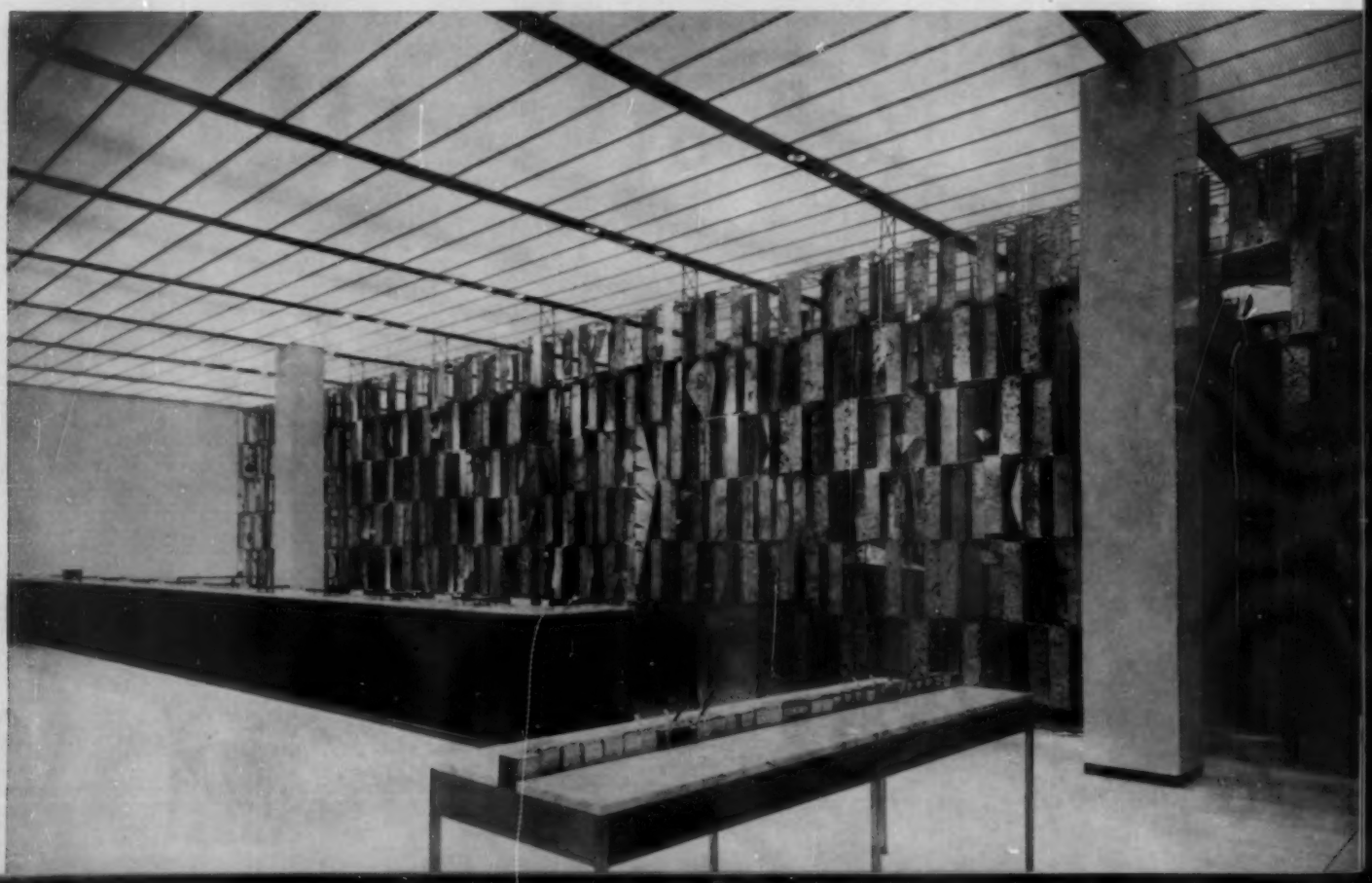
Bertoia screen in new Manufacturers Trust Company bank is visible from Fifth Avenue. Skidmore, Owings & Merrill were Architects: Gordon Bunshaft, in charge of design; William S. Brown, in charge of co-ordination; Eleanor Le Maire, Interior Design Consultant. Photo: Ezra Stoller

The sculptural screen of richly textured metals in Manufacturers Trust Company's ultra-modern bank by Skidmore, Owings & Merrill is as daring in design impact as any of the other features that make this building outstanding. It has an important visual function, providing a treatment along the rear wall of the main banking room that is capable of attracting and holding attention. This was wanted in the large room, with two glass walls fronting Fifth Avenue and 43rd Street and two windowless inner walls. Harry Bertoia's screen is the answer—extending 18′ from floor to luminous ceiling, and 70′ long.

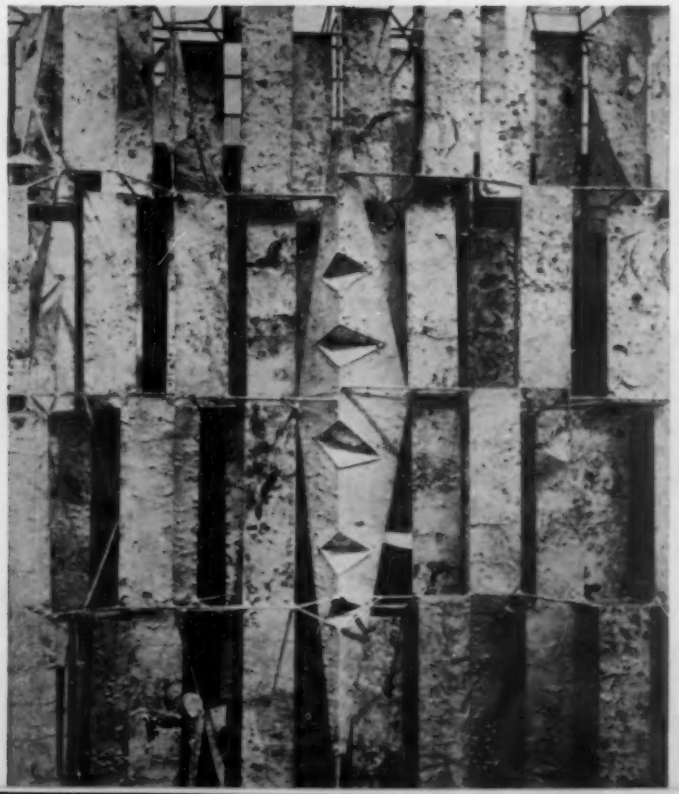
The design is abstract—a composition based on space relations, reflections from planes at different angles, play of light on metal surfaces of rich textures and subtly varied coloring. Its golden glints suggest the treasure that is the banker's stock-in-trade. The screen has a joyful spirit and recalls sunshine on a field of ripe grain. (See color illustration on page 96 of Bertoia's screen in the restaurant building of General Motors Technical Center, of which this is a larger version).

The screen consists of some 800 plaques, each 30″ by 7½″ and about ⅛″ in thickness, arranged in horizontal rows and in five vertical planes, to a depth of 22″. These are supported by a system of horizontal webs formed of ⅜″ rods welded together, spaced 30″ apart vertically. Vertical rods are placed at intervals, integrated with the horizontal webs, and there are braces to give rigidity, some of simple X form and others ornamented with cut-out sculptural shapes. The screen is anchored to the floor and ceiling slabs.

The plaques of 11-gage enameling steel are coated with metals that were applied in the molten state. This process was developed by Bertoia in his studio-workshop in eastern Pennsylvania, representing a new art form by this Italian artist who was trained in Detroit and taught at Cranbrook Art Academy. The screen was made in seven 1500-pound sections, to facilitate shipping and erection. Thus the majestic scale is appropriate.



Bertoia used an acetylene torch to cut the steel accent motive (below) *and the plaques, as well as for melting brass, nickel, and copper to flow over the plaques. The screen was lacquered, for preservation, and is dramatically illuminated by spotlights.*



U.S. Embassy Office Building, Havana, Cuba

architects	Harrison & Abramovitz*
electrical engineers	Smith & Silverman
mechanical engineers	Jaros, Baum & Bolles
structural engineers	Severud, Elstad, Kruger
furnishings	Knoll Associates
landscape architect	Thomas D. Church
general contractor	Mira & Rosich

* For U.S. Department of State, Foreign Buildings Operations

The U.S. Embassy Office Building in Havana stands on a magnificent site along the Malecon, facing the Gulf of Mexico. For protection against storms, the building was set on a terrace 3 to 5 feet above street level. To mitigate the effect of constant salt spray, the main offices on the ground level face interior courts. Except for the Ambassador's balcony, which is above spray level, the building's narrow façade facing the sea is unbroken. To eliminate interior columns in the tower, ribbed floor slabs spanning 39'-0" from wall to wall were employed. The slabs are supported on rectangular reinforced-concrete piers 5'-0" on centers. The structure is faced with imported Roman travertine, one of the many materials supplied by foreign governments. Windows are of heat-resistant glass, except for windows behind the travertine grill on the south façade of the low building. Windows of tower building have operable sash to permit cleaning from the inside, and for ventilation when air-conditioning system is not in use. Property walls are of local jaimanitas stone.

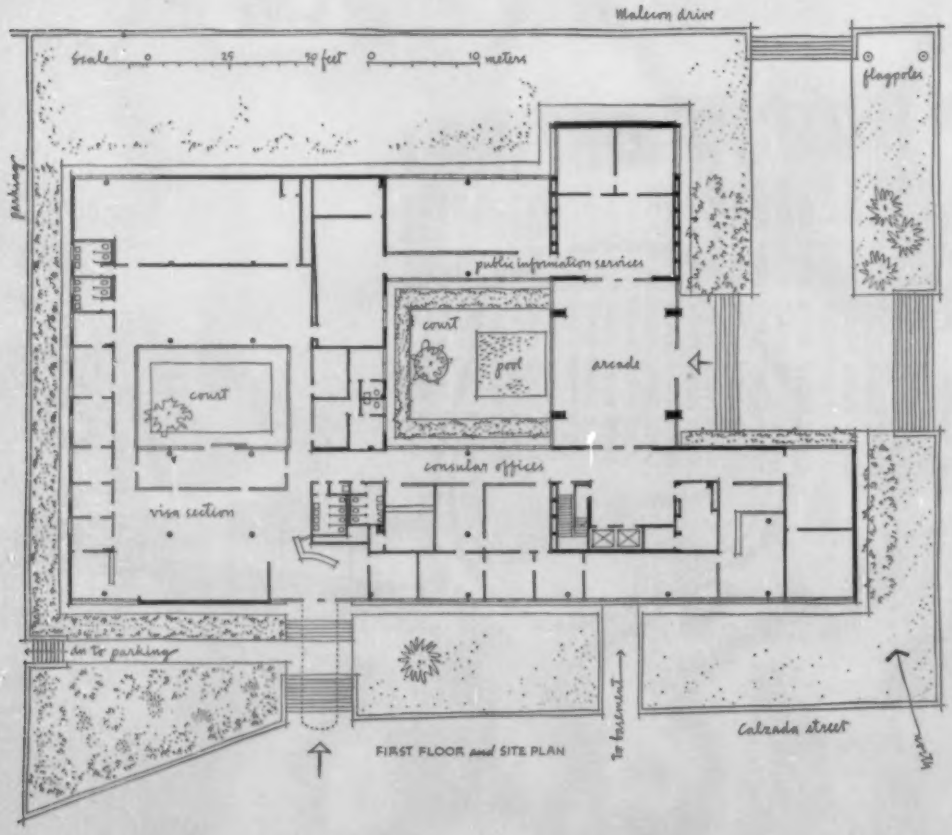
Landscaped patios (right) *in the local tradition bring light and refreshing greenery close to interiors. Visa section has special entrance* (acrosspage top) *separate from main entrance* (foreground below).

Photos: J. Alex Langley

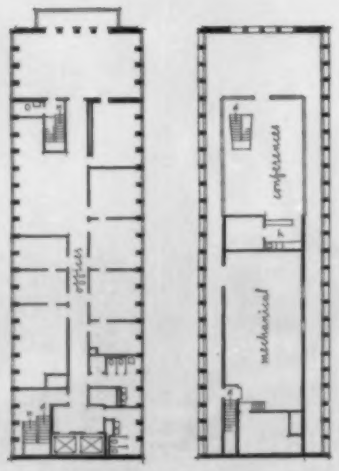
U. S. Embassy Office Building

U. S. Government buildings abroad can assist greatly in establishing and perpetuating cordial relations with the people of other countries. Cognizant of this fact, the State Department is engaged in a long-range program which includes the construction of many new diplomatic and consular buildings. Wherever local requirements dictate new construction, outstanding U.S. architects have been chosen to design and erect new buildings in conjunction with Washington's Office of Foreign Buildings Operations. Since conditions in the foreign countries obviously vary greatly, no standardized design formula can or should be evolved. Here the architect's search for the most appropriate form is all-important; for success depends upon his understanding of the specific problem involved. Beyond considerations of function, utility, and security, the buildings must on the one hand be friendly, inviting, and not too removed from local cultural tradition; and on the other hand symbolize the dignity and importance of the United States. In this issue P/A presents two widely differing solutions: the Havana Embassy (the completed building here illustrated) and the Honduras Embassy offices and Embassy residence, a project in the drawing state (*see* PROGRESS PREVIEW).

A major planning feature of the Embassy office building in Havana is the division between sections to which the general public has access and private offices where operations of a diplomatic and confidential nature are carried out. To effect this separation, offices serving the public are restricted to the ground level. Here consular activities, public information services, and visa section are located. Embassy and administrative offices are above ground level, where vertical circulation could be simply controlled.



FIRST FLOOR and SITE PLAN



FIFTH FLOOR PENTHOUSE

Havana, Cuba

From the earliest planning stages the supervising architect worked closely with interior designers and landscape architects. Results are illustrated by the main lobby (above) *and the landscaped court* (acrosspage).

Waiting rooms, offices, and general office space of visa section (right *and* below) *surround a second patio.*

U. S. Embassy Office Building, Havana, Cuba

Travertine grill provides effective sun control as well as decorative wall surface for office (right) *on ground floor. Penthouse terrace* (below) *affords magnificent view across Havana and Gulf of Mexico.*

Room for private conferences (above) *is located in penthouse* (see INTERIOR DESIGN DATA for further information). *Library for public use* (right) *is on ground level. Typical office in tower structure* (below) *shows standard window treatment. Specially designed aluminum blinds with wide louvers, properly proportioned to scale of room, improve outward visibility without inhibiting effective sun control. Insulated extruded-plastic wall partitions, used on all typical floors, were imported from England. These are prefabricated and demountable.*

solar orientation: application of local wind factors

by Imanuel S. Wiener*

Up to the present, when the orientation or position of buildings on a site has been considered, solar radiation—direction and heights of the sun during different periods of the year—has been the main climatic factor in determining the orientation. The solar-radiation factor is fixed by the latitude of the locality. As a result, the orientation of a building is generally accepted as being either good or bad, according to how it relates to the solar radiation for the climatic zone in which it is located.

So far, the conventional "prevailing-wind direction" is the only wind factor that has been taken into consideration in orientation and, even then, not very often. When corrections for an undesirable wind effect have been made, it has been done mainly through the use of wind breaks, planting, and so on, in an attempt to create favorable microclimatic conditions. Such devices have no effect on the upper stories of such tall buildings as apartment houses, office buildings, or hospitals. Very little, if anything, has been done to take advantage of the very desirable wind effects during the hot season.

In order to arrive at the specific effects of winds on human comfort during the different periods of the year, the annual and monthly variations of prevalence, velocity, and temperature of the winds by direction must be taken into consideration.

Through a study of the specific climatic conditions of Baltimore for a 25-year period (1924 to 1948), a method of modifying the fixed solar orientation of buildings through the application of wind factors has been developed. The wind factors were determined by the local variation in wind behavior and its characteristics. In general, the method will hold good for any locality.

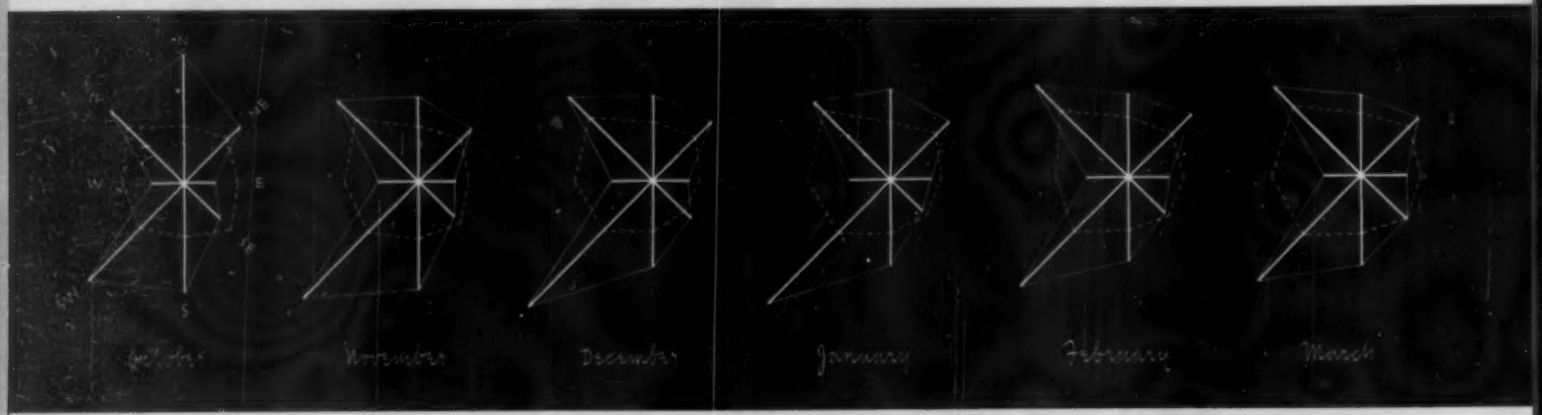
procedure in compiling data

Three kinds of data are necessary:

1. Prevalence of winds in terms of percentage of time.
2. Velocity in mph.
3. General characteristics, such as cool and hot breezes, etc.

A breakdown of wind characteristics by direction (eight main directions and monthly means, respectively) is usually available from the official meteorological records for the locality. Monthly prevalence and velocity for each of the eight directions are then plotted *(Figure 1)*. Average monthly prevalence and velocities by time and direction are then plotted on separate charts *(Figures 2 and 3)*. This permits an easy interpretation of the relative importance of winds by direction, and the correlations, if any, between prevalence and velocity.

The relative thermal properties of winds, as a rule, will not be available from official reports; however, in most cases very general information will be sufficient. The important characteristic which will have effect in this specific case is the relative temperature of winds over the different periods of the year, in terms of the main hot and cold breezes.



* *This orientation method was developed by the author while associated with the Department of Planning, Baltimore, Maryland, Arthur McVoy, Director. He was assisted by Henri J. Raphel, former Planning Analyst of the Department. Wiener is currently working on City Planning Research for the Ministry of Planning and Reconstruction, Paris.*

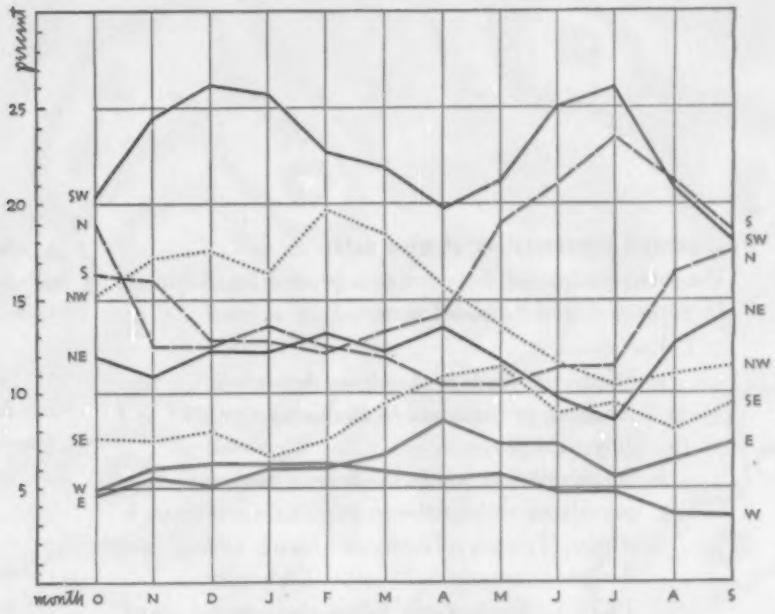


Figure 2—average monthly percentage of wind by time and direction.

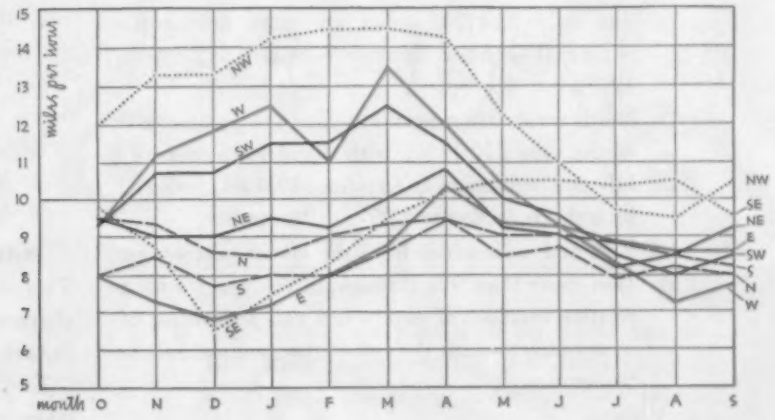
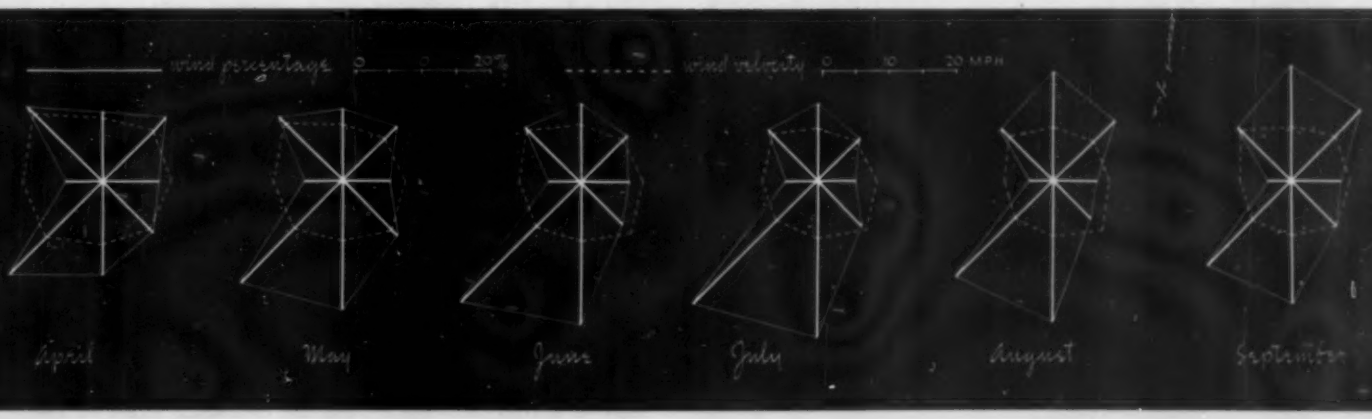


Figure 3—average monthly velocity by direction.

Figure 1—surface winds: frequency of directions and average velocity (below). *(Compiled from Meteorol. Form No. 1001, U. S. Dept. of Agriculture Weather Bureau, Monthly Records 1924-1948. Observations taken at Custom House & Candler Building, Baltimore, 215' above ground level.)*



general interpretation of wind data

The interpretation of the wind data plotted for Baltimore *(Figures 1, 2, and 3)* is as follows:

1. Prevalence
   a. Southwest winds predominate throughout the year reaching two maxima in December (26.2%) and July (26.0%).
   b. Northwest and south winds each rank second in prevalence with northwest reaching a maximum in winter (February 19.8% and March 18.6%) and declining towards mid-summer (minimum in July 10.5%). South winds follow the reversed trend, attaining a maximum in summer (June 21.0% and July 23.4%) and a minimum during the winter (December through February, 12.8% to 12.1%).
   c. North winds are even throughout the greater part of the year (10-13%) with a sudden increase in July to a maximum in October (19.0%), followed by a sharp decline to 12.5% in November.
   d. East and west winds have the lowest percentages (not more than 9% throughout the year) with a relative increase of east winds and a decrease of west winds towards the end of the summer, July to September.
2. Velocity
   e. No apparent correlation is observable between trends of velocity and trends of prevalency by direction.
   f. Variations in velocities, both for different directions and for any given direction throughout the year, are less than the comparable variations in prevalence.
   The bulk of average monthly velocities for all directions lies between 7½ and 12 mph.
   g. The generally observed trend *for all* directions is a gradual increase of velocity throughout the winter, from a minimum at the end of the summer (July and August) until March and April, when a maximum velocity is attained for all directions. (Except for southeast wind, when April to August register maximum velocity with highest velocity in August.)
   h. Northwest winds maintain the highest velocity throughout the year and follow the same general trend as described *(paragraph g. above)* with a maximum velocity of 14.5 mph in February and March.
   i. West and southwest winds rank second in velocity (maximum velocity of 13.5 mph and 12.7 mph respectively in March) with relatively higher average velocities during the winter months (November to April).
   j. Variations of average velocities for different directions tend to increase during the winter months.
3. Thermal Properties (General trends—not measured data)
   k. Highest temperature breezes to be expected from southwest (blowing over hot, dry, inland territories) may prevail in southwest to northwest sector during the summer.
   l. Northwest and north are coolest breezes in winter. (Northwest are the coldest.)

selection of relevant factors

This step consists of the evaluation of the various wind characteristics in order to determine the over-riding wind factors which will govern the orientation of buildings.

Two main effects of wind on human comfort must be taken into consideration—the general cooling effect and the alleviation of vapor pressure in time of high humidity. The three wind factors (1: prevalence in percentage of time; 2: velocity—3 to 7 mph average required for comfort in the moderate zone; and 3: temperature in terms of hot and cool breezes) bear directly on the cooling and evaporating qualities of a wind.

In broad terms, breezes, except for the very hot ones, will be very desirable during the overheated period of the year (in this case, from the end of May to the middle of September when temperatures of unsheltered areas are above 75 F) and conversely will be undesirable during the cold and transitional periods (the beginning of November to the beginning of March).

the method

The method of modifying solar orientation through the resultant wind factors consists of two main phases: Derivation of a resultant scoring for the combined effect of 1—

prevalence, 2—velocity, and 3—thermal characteristics of winds by direction; determination of a resultant orientation scoring of the combined over-all sun and wind factors.

1. The resultant wind scoring by direction:
   a. Averages of prevalence (P) and velocity (V) are computed on the basis of the peak winter and summer months. (Winter: November to February; summer: June to September.)
   b. Scoring is based on the assumption that all winds in winter are undesirable, and will have consequently a minus (—) scoring value. Conversely, summer winds are desirable and will have a plus (+) scoring value.
   c. The resultant wind score (W_s) consists of the modification of the wind volume (PV) according to the thermal property of the wind.

      Winter and summer scores are computed separately by direction, and are subsequently added to get the net yearly score by direction.
   d. Winter scores (W_{s1}) are obtained by the product of the volume (PV) by a variable thermal winter coefficient (C_{Th1}) as follows:

$$W_{s1} = PVC_{Th1}$$

Thermal Characteristics	Medium	Cool	Cold
Thermal Coefficient (C_{Th1})	1	1.25	1.50

   e. In order to obtain the summer scores (W_{s2}) the relative importance of velocity (V) in the PV value is reduced to a fraction of its value in direct proportion to the $\frac{V}{P}$ ratio by substituting for PV:

$$P\left(V - \frac{VC_v}{P}\right)\left[\frac{\Sigma PV}{\Sigma P\left(V - \frac{VC_v}{P}\right)}\right]$$

Where: P = prevalence
V = velocity
C_v = a variable coefficient

The reduction of the V value is based on the assumption that the relative importance of prevalence is higher than velocity for human comfort during the summer period.

   f. The velocity coefficient (C_v) will be $C_v = 1$ for all average velocities under 3 mph, and will range between 1 and 9 for velocities between 3 and 12 mph in direct proportion to the value (V max — V min) for the directions of the summer season.
   g. The summer scoring of positive value (W_{s2}) is obtained by dividing the product by a variable thermal coefficient as follows:

$$W_{s2} = P\left(V - \frac{VC_v}{P}\right)\left[\frac{\Sigma PV}{\Sigma P\left(V - \frac{VC_v}{P}\right)}\right] \div C_{Th2}$$

Thermal Characteristics:	Medium	Warm	Hot
Thermal Coefficient (C_{Th2})	1	1.25	1.5

   h. The resultant net wind score for winter and summer winds is obtained for each direction by the addition of the winter score and the summer score:

$$W_{st} = W_{s1} + W_{s2}$$

$$W_{st} = -(P_1V_1C_{Th1}) + \left(V_2 - \frac{V_2C_v}{P_2}\right)\left[\frac{\Sigma P_2V_2}{\Sigma P_2\left(V_2 - \frac{V_2C_v}{P_2}\right)}\right] \div C_{Th2}$$

Where P_1 = Average winter prevalence
P_2 = Average summer prevalence
V_1 = Average winter velocity
V_2 = Average summer velocity
C_{Th1} = Thermal winter coefficient
C_{Th2} = Thermal summer coefficient
C_v = Variable velocity coefficient

   i. The absolute wind scores thus obtained are modified for a percentage comparison on the basis of:
   W_{st} (max) = 100

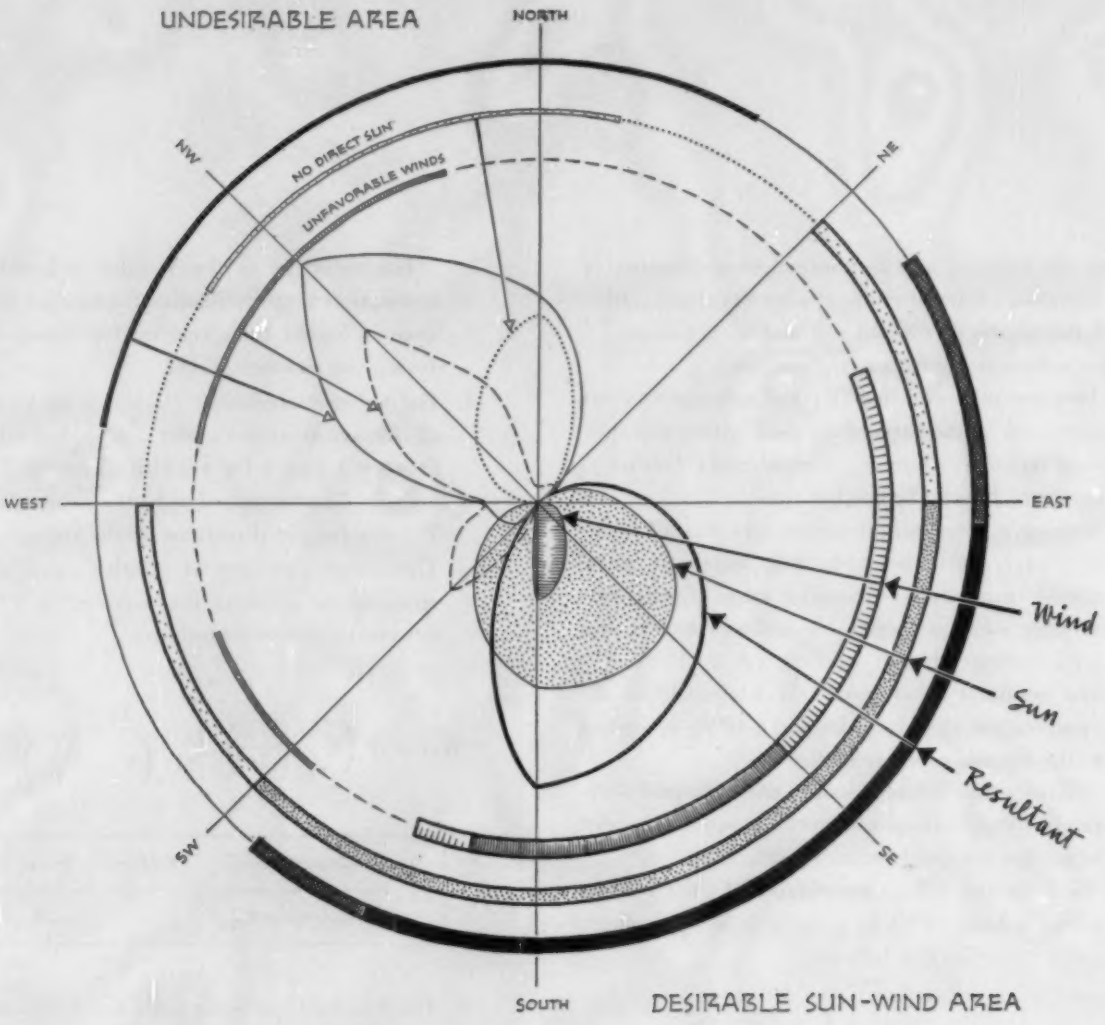


Figure 6—synoptic orientation chart for Baltimore.

2. Scoring for solar orientation by direction

j. The desirability of solar orientation is determined by directions in terms of highest and lowest desirability (+100 and −100 respectively) according to the established standards for the given climatic zone. For Baltimore the solar orientation scoring (S_s) by direction will be as follows:

Direction	N	NE	E	SE	S	SW	W	NW
Summer score (S_s)	−100	0	+50	+100	+100	+50	0	−50

3. The combined Sun and Wind orientation scoring

k. In order to determine the final orientation scoring for sun and wind factors the relative importance of sun factors and wind factors for orientation has to be evaluated in each particular case. For this country, in the Middle Atlantic zone the relative sun score value for orientation may be considered twice the value of the wind score. (The sun factor in orientation will gain in relative importance in the northern and continental regions and lose its importance in the tropical zone.)

The absolute resultant orientation score (R_{ss}) will be:

$$R_{ss} = W_{st}\, C_w \div S_s$$

Where: W_{st} = Resultant wind score
S_s = Sun score
C_w = Variable wind coefficient (according to climatic zone).

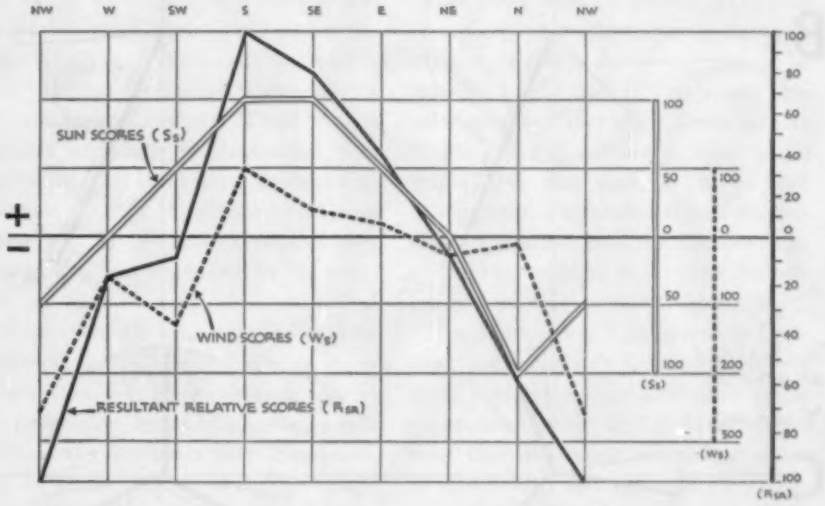
For the Middle Atlantic coastal zone $C_w = 0.5$.

1. The resultant absolute scores thus obtained are

Figure 4—general scoring system.

Direction	WIND														SUN				R_s	
	WINTER (Nov.-Feb.)						SUMMER (June-Sept.)						RESULTANT WIND SCORE		Yearly exposure			Sun score S	Absolute Result. score $R_{ar} = W_s + C_T + S_s$	Relative Result. score R_{sr} S = +100; NW = −100
	P_1—Prevalence % of time	V_1—Velocity mph	$P_1 \times V_1$	C_{Th1} Temperature			W_{wi} Winter score (−)	P_2—Prevalence % of time	V_2—Velocity mph	$P_2\left(V_2-\frac{V_2C_T}{P_2}\right)x \Big/ \left[\Sigma P_2\left(V_2-\frac{V_2C_T}{P_2}\right)\right]$	C_{Th2} Char. Thermal			Summer score W_{su}(+)	Result. Wind score W_{wi}	W_s max = 100						
				Md.	Cl.	Cld.				ΣP_2V_2	Med.	Warm	Hot				Good	Fair	Bad			
				1	1.25	1.5					C_{Th2}÷1	(÷)1.25	(÷)1.5									
N	12.8	8.6	110.1		x		−137.6	14.3	8.2	119.6	x			+119.6	−18	−19			xx	−100	−110	−56
NE	12.3	9.2	113.2		x		−141.5	11.6	9.1	105.9	x			+105.9	−35.6	−36		x		0	−19	−19
E	5.7	7.5	42.8	x			−42.8	6.9	8.8	57.0	x			+57.0	+14.2	+15	x			+50	+58	+39
SE	7.5	7.7	57.8	x			−57.8	9.1	10.4	93.1	x			+93.1	+35.3	+37	xx			+100	+119	+79
S	13.5	8.0	108.0	x			−108.0	22.2	8.7	202.7	x			+202.7	+94.7	+100	xx			+100	+150	+100
SW	24.8	10.9	270.3	x			−270.3	22.4	8.5	199.5			x	+133.0	−137.3	−146	x			+50	−23	−12
W	6.0	11.8	70.8		x		−86.5	4.0	8.1	26.4		x		+21.1	−67.4	−71		x		0	−36	−19
NW	17.8	13.9	247.4			x	−371.1	11.3	9.1	102.0	x			+102.0	−269.1	−285			x	−50	−193	−100

Figure 5—graph showing sun scores (S_s), wind scores (W_s), and resultant relative scores (R_{sr}).



finally converted to Relative Resultant Scores (R_{sr}) for application purposes.

The conversion is made into a percentage score with:

R_{sr} max = +100

R_{sr} min = −100

m. The general scoring system according to this method for the climatic conditions in Baltimore is shown on the scoring chart (*Figure 4*).

n. By plotting the sun scores (S_s), wind scores (W_s), and absolute resultant scores (R_{sr}) for the different directions respectively, the corresponding scores for intermediary directions can be obtained (*Figure 5*).

application of the resultant score

For application purposes, a synoptic chart is plotted, showing the sectors of relative desirability and undesirability in terms of wind, sun, and over-all resultant scores *(Figure 6)*.

The general principle governing the application of the synoptic chart to specific cases involves the superimposition of the optimum and permissible ranges of orientation for solar and wind factors respectively, as scaled off from the chart. The overlapping ranges will determine the resultant range of orientation.

The application of the method for Baltimore is shown *(Figure 7)* for three different types of buildings:[1]

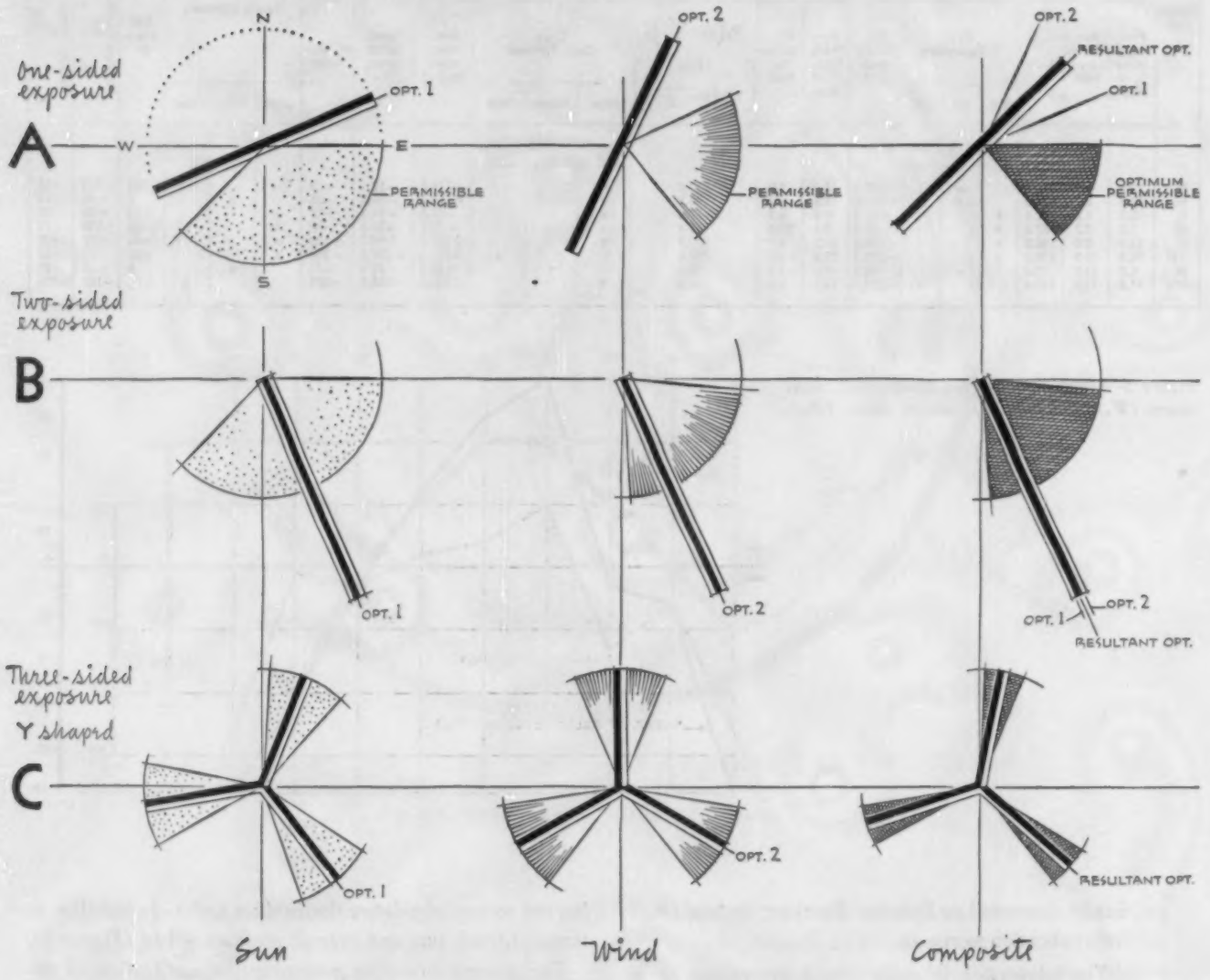
A. With desired exposure on one side of the building.

B. With desired exposure on two opposite sides of a building.

C. With desired exposure on three sides of a Y-shaped building.

[1] *One need not attempt to be too precise in applying the synoptic chart to a particular building type. A study of the desirable sun and wind scores and the related patterns clustered around the center of the chart will establish the best orientation for each building type. Ed.*

Figure 7—application of method for three different building types at Baltimore: A—desired exposure on one side of building; B—desired exposure on two opposite sides of building; C—desired exposure on three sides of Y-shaped building.



summary and conclusion

1. The general determining factor of orientation is the solar radiation factor, considered fixed for a given climatic zone.

2. The solar radiation factor for tall buidings (where micro-climatic influences such as topography, plants, and surrounding structures are negligible) can be modified through the wind-factors considerations by determining the resultant permissible range in each case according to the method set forth.

3. The deviation, within the permissible range of the adopted orientation, from the optimum resultant orientation towards the sun or wind optima may be further influenced by considerations such as type of construction, the adoption of air conditioning, etc.

4. Where the permissible ranges of solar and wind orientation are diametrically opposite or do not overlap, the preference of one orientation to the other will depend on which of the climatic factors (sun or wind) can be corrected in each specific case by the use of artificial means such as air conditioning or brise-soleils.

5. As a general observation, it may be noted, that although climatic factors are not the only considerations that will govern the location of buildings in the general site plan, the exact resultant range of the most desirable orientation in terms of all the climatic factors, should be determined in order to evaluate the deviation, if any, from the optimum climatic orientation.

electrical distribution for automation

Is the time approaching when architects and engineers will find it advisable to retain at least one person on their payrolls who will be conversant with the structural and electrical demands engendered by expanding usage of automatically controlled equipment,* and with the type and size of companies likely to install it for manufacturing or data-processing operations?

For the past several years farsighted industrial, business, social, and municipal organizations have been investigating the productive uses of automatic processes in relation to their own specific problems. And where do they go for information? Right to the equipment manufacturers themselves, many of whom provide educational services in their own fields—data processing or automatic control for industrial purposes. Of course, with automatic control, equipment has to be tailored to the process, but with data processing in business, basic problems are much the same; techniques applicable to big business are proportionately adaptable to small business. Differences are largely centered in the volume of data to be processed.

Although conversion to automation on any large-scale basis has been cautiously approached—as it should be—it is well ahead of a mere trend. Moderate curiosity in the advantages to be derived by the use of automatically controlled equipment preceded the present robust interest. Direct exposure to what it actually accomplishes has created a broader acceptance than may appear on the surface.*

Irrespective of the type of automatic equipment they produce, manufacturers are remarkably efficient in spreading their gospel among present and potential users, and in illustrating the effectiveness of their machines and devices. Perhaps the neatest phase of their efforts is the opportunity they present for an exchange of ideas between managerial and departmental heads of kindred businesses who have similar problems but whose programs for solving them have varied. Joint meetings of related groups is the modus operandi of these educational gatherings. Many of those attending bring with them the records and forms they use in their own working systems which are discussed, analyzed—and frequently improved upon—during the conference sessions. There are no stronger advocates of automation than the individuals and the organizations using it, and to those entertaining an initial step in the same direction, they present a potent argument for its adoption.

What does all this mean to modern architects and engineers? Primarily, it means that they must be cognizant of the undeniable demands automation will make of the structures they are designing. In planning areas where the equipment conceivably might be located, floor load is a big factor. All of it is heavy, but 20,000 lb for a large electronic computer—with its auxiliary power supply—is not out of the ordinary, and heavier models will shortly appear. The metallic magnetic tape used in some of these computers is also heavy. One sq ft of stacked up reels could easily run to 400 lb.

The major consideration is sufficient power to operate electrical or electronic equipment. It should at least be available at each floor level, or spare risers should be there so that additional power can be quickly and inexpensively delivered should it be required. The equipment operates from a few watts to 130 kw, and even higher capacity models are now being designed. Also, equipment of this caliber needs constant cooling both as to machines themselves and the areas in which they are located. Present air conditioning of industrial and commercial structures can be far short of future requirements as more and more automation finds its way into business.

Unless automation is kept very much in mind, buildings erected even in the next two or three years can be obsolete before their original mortgage terms expire. Right now the owners of one large and presumably well-planned office building—completed within the past two or three years and occupied by one tenant—are faced with an all but staggering investment of $500,000 for re-wiring to support automatic equipment soon to be installed by the tenant. This would be a substantial rewiring expenditure for any building—let alone one so new—yet it would have cost perhaps only a fifth of that amount to have designed the necessary expansion into the electrical system of that building at the time the wiring system was originally installed.

The Metropolitan Life Insurance Company unquestionably has had more first hand experience than any other single organization with the electrical-wiring woes that accompany expanding usage of electrically and electronically operated data-processing machines. Since they are one of the largest commercial users of this equipment, their experience is more indicative than typical—a dramatic, large-scale indication of what on a smaller scale can happen to buildings now in a drafting-board stage—as more productive uses for automation are devised. It represents a 20-year tussle keeping abreast of an electrical consumption that increased 264.7 percent from 1933 to 1953, and has every prospect of going higher.

In 1930, when the first of the three 30-story units for their block square 24th-Street building in New York was in its final planning phase, only a small portion of the company's present automatic equipment had been acquired. The speed and accuracy with which the machines processed records, and the additional data they could record in one operation,

* *"Machines that can perform the functions of control and of data processing. The widespread application of these machines and of the principles that underlie them, is today bringing about one of the most fundamental changes our economy has ever experienced. . . . Cost reductions, increased uniformity of product, safer working conditions, and improved operations in both plant and office, together with higher output and less waste are the most obvious results of the use of automatic control; and they are also its economic justification."* John Diebold, July 1956 Automatic Control.

had clearly demonstrated the advisability of extending the company's use of automation. Exactly what forthcoming equipment might be, how much electric power it would consume, or how fast it would be installed was anybody's guess. Of only one thing they could be certain: Electrical capacity in the old building was all but exhausted. The first unit, about to be constructed, would have to be electrically prepared to support all incoming automatic equipment.

There were no comparable situations at that time, no previous automation-usage patterns on which to base—and anticipate—potential electrical demand. Dealing in known equations was one thing, exploring unknowns for a workable basis was quite another. However, in the case of the first unit, over-estimating future electrical consumption could prove a safe and reasonable approach. As time went on, adjoining units were to be erected. Excess capacity—should it exist—could easily be absorbed by the next unit. In their design and installation of an electrical system that could supply the first unit with a total of some 7800 kva, the engineers planned generously. They also equipped distribution boxes at different floor levels with a size larger conduit in anticipation of possible greater requirements in certain locations. Yet, despite this liberal planning, when the second unit was constructed in 1940, new automatic machines acquired during the ten-year interval were already exhausting the electrical capacity built into the first unit. It was necessary, therefore, to install a system capable of producing another 5200 kva in the second unit.

By the time 1950 rolled around, World War II was over, government priority less rigid, and considerable electronic talent long concentrated on instruments of war had been diverted to designing and producing peace-time equipment resulting in its increasing availability to business and industry. Modern electronic machines, larger in size and capacity, had been steadily added to Metropolitan's growing mechanized program. Automatic equipment—both electrical and electronic—located in those sections of the 24th-Street building already completed occupied about five times as much floor space in 1950 as in 1932; electrical consumption had continued to climb, and it was time to erect the last unit of the 24th-Street building.

To handle part of the electrical load anticipated in the final unit, a transformer group with one take-off of 1300 kva was installed in the basement—balance to be supplied from the 15th-floor transformer groups of the second unit. However, additional feeders of 500,000 CM were provided for business machines, and four years later the business machine load had again shot up to a point necessitating installation of two more feeders of the same capacity in the third unit. As of today, the entire building has 10 take-offs of 1300 kva each, with distribution roughly divided so that the first eight floors are fed from basement switchboards, and from the 9th to the top floor, power is supplied from the 15th-floor switchboards which are approaching the maximum design capacity. This is due in part to the heavy concentration of business machines on the floors serviced from these switchboards.

At times this long, drawn out struggle to keep electrical capacity apace with ever increasing consumption must have seemed like a losing race. Company officials directing the mechanizing program realized that the equipment would consume a great deal of electricity and, for the more powerful machines, loads would be highly concentrated. While their electronically controlled 130-kw computer system was under consideration, they knew most of their existing circuits were well loaded with conventional-type business equipment. They also knew that this one large installation would require special wiring, as near constant voltage as possible, and additional refrigeration equipment to cool the computer—with its auxiliary machines—and to augment the general air conditioning of the rooms in which they were to be located. On the other hand, automation, which meant doing work faster, and doing things that perhaps could not have been afforded through slower methods, was worth every headache passed on to their electrical division, whose responsibility it was to wire for equipment requiring anywhere from a few watts to the 130 kw of their electronic-computer system. As a matter of fact, automation has proved so successful—and potential savings indicated by the use of machines so extensive—that the company will continue to increase their use of various types of electronic equipment.

The Metropolitan is also in the throes of reconstructing its functionally outmoded 23rd-Street building, a landmark to New Yorkers. Only the tower will remain—everything around it will be completely new. The 14-story building will be constructed in two units, the first of which is under way, and the building as a whole will reflect a background of electrical-wiring experience acquired the hard way.

The present industrial-machine load in the 24th-Street building, where most of the machines are located, runs about 1⅓ watts per sq. ft. based on the total usable area. The minimum capacity of 1½ watts per sq ft now planned for machine loads anticipated in the first section of the modernized structure, is based on an assumption that not too much high-powered electronic or electrical equipment will ever be located there. But, on the basis that assumption and fact so often are poles apart, that 20 years of a really trying experience cannot be overlooked, expansion facilities considerably above present minimum estimates are being thoroughly analyzed. For example, feeders providing 3 watts per sq ft for lighting are being redesigned to give an additional 25 percent capacity. The refrigeration equipment is designed to provide chilled water for unit coolers to compensate for approximately 6 watts per sq ft for 90,000 sq ft of business machines. As time goes on this may or may not be sufficient, so provision to meet possible future requirements has to be considered. And so it goes; hours of planning, consulting, redesigning in anticipation of an electrical expansion that could very possibly equal that of the past twenty years.

Exclusive of the tower, which is electrically self-sustaining, the new 23rd-Street building will contain five electrical shafts when completed. Three of the five shafts are located in the first unit (two of them 8′ x 10′ in size, one 8′ x 15′). All shafts will be large enough to provide panels at each floor level

and to carry spare risers. Depending upon the areas they serve they will have one or two industrial power feeders just for office equipment, approximately six lighting feeders and, of course, the spares. Between five and six thousand feet of 1¼" conduit will be run out on 10 of the 14 floors—about 50 runs per floor for telephone, low-tension and industrial power connections. The 13th and 14th floors, where mechanical equipment is to be placed, will be serviced by a subswitchboard having fifteen 3½" conduits running to it. Twelve more of the same size will run to the elevator switchboard. To summarize: At the present time engineers are distributing at about 1½ watts per sq ft but providing two spare conduits per shaft for future loads, which will roughly permit an additional 200 kw per shaft.

Perhaps at first glance Metropolitan's battle with increasing electrical demand —and their determination to be well fortified to meet further expansion— may appear pertinent only to their particular and extensive operation—of no import to architectural and engineering considerations for the average commercial structure. Is this actually so?

It must be admitted that in this field of data-processing equipment—today can quickly become yesterday. Not too long ago, for example, air conditioning was an expensive and cumbersome installation enjoyed by a very limited few. Today it is directly responsible for the nationwide epidemic of "hardened arteries" that has crippled wiring systems in buildings which, according to accepted standards of their construction eras, should have been in the very prime of their existence. It *could* happen again, for to all outward appearances automation travels the same road. Even the smallest business establishment is using some automatically-controlled machine, which has somewhat the effect of salted peanuts—once tried, the inclination is to have more. Should individual tenants in large office buildings increase their use of even medium-powered equipment by only two or three machines each, wiring systems would quickly feel the impact. It would not take many small offices doing just this to reach an over-all electrical consumption approximating that of one heavy user, such as the Metropolitan.

It is true, too, that the use of 130-kw electronic computers is an exception rather than a rule, but high-power equipment with its capacity to handle many operations at one time usually replaces several lower powered installations, hence the net consumption of power is not necessarily more than for the machines they replace. It is, of course, concentrated in one spot.

Automatic office equipment is certainly not new. What is new, though, is the tendency to eliminate overlapping and intermediate steps, to make one recording operation serve several purposes, and to make one machine perform more than a single function. Automation at this level is moving into many offices—and will move in faster as newer equipment is designed. Ten years from now will its ever widening usage deal the same costly blow to wiring systems that air conditioning dealt them so recently? Unless today's buildings are planned with tomorrow's electrical standards well in mind, they will be as unprepared for automation as their predecessors were for air conditioning.

The Metropolitan Life Insurance Company was in a singularly enviable position. Their three-unit construction plan afforded them three distinct opportunities to evaluate electrical advancement. At each of the last three decades the handwriting was right there on their own walls. They had been associated with changing electrical conditions because of their own use of automation, and in the past six years those of their staff concerned with planning have been working closely with manufacturers of new equipment. Their own procedures are being analyzed from stem to stern.

That their own buildings are tenant-constructed, owned, and operated is of considerable interest, too. Builders so seldom manage structures they erect that they are naturally more concerned with their own specific problem of costs than with an operator's problems of the future. A builder's responsibility is to keep construction costs at a minimum. Nevertheless, the long-established formula of allocating certain monies to different phases of construction and of letting out contracts to the lowest bidders, may need some reviewing. For years, construction costs have remained at pretty much the same ratio—a certain percent of the total cost for foundations, another for steel, another for brick and mortar, plumbing, painting, etc. Handling these contracts on a competitive—or a minimum—basis is reasonable enough. The one thing that has changed, and radically so, is wiring. "Minimum" can no longer be economically associated with wiring. No one knows exactly how much electrical work is required. No manufacturer of equipment or appliances would go out on a limb and say: "Beyond this point we will not go; wire for such and such a capacity and it will be sufficient." The secret, they will tell you, to a long, prosperous existence for any commercial structure is in the amount of flexibility built into the installation. Design shafts large enough to hold extra risers, when and if they are required— or, better still, run them in with the original installation at little additional cost. Future owners will value this farsighted planning. It would prove a big selling point, too, in the future sale of buildings. Buildings change hands with considerable frequency these days.

Architecturally it is not always feasible to run in long, straight electrical shafts. Buildings are designed to be beautiful as well as functional, and setbacks are obligatory in most tall buildings. But, when shaft offsets are necessary, if architects and engineers would arrange for several short pieces of spare conduit to be bent and installed in them, it would greatly reduce costs for future wiring expansion. Often it is next to impossible to work in these connecting feeders after the building has been completed, or to do so ruins ornamental ceilings, disrupts business in street level stores, and generally upsets any tenant occupying space around offsets. To design ample flexibility into the wiring system of a building is to provide it with the greatest, single element now known for a long and prosperous life.

structural significance of reflective radiant conditioning

by C. A. Mills, M.D., Ph.D.* and E. H. Morgan**

Sharp structural significance attaches to the use of radiant instead of convective channels for the introduction or removal of heat in year-round conditioning. Use of radiant channels in conjunction with infrared-reflective surfacing materials (foil wallpapers and Milium[1] window draperies), greatly lessens the structural factor in winter-heating and summer-cooling loads. Both laboratory test and field experience indicate, in fact, that the structural contribution to summer-cooling loads can thereby be reduced by 75 percent and the winter-heating loads by 60 percent. Such load reductions lessen sharply the economic and spatial impact of adequate indoor conditioning in new-building planning.

Recently, there has been published a reappraisal of the engineering and physiological aspects of conditioning, with respect to such change-over from convective to radiant channels for heat transfer.[2] This reappraisal brings into sharp focus compelling reasons why such change-over is indicated. From three important points of view—physiological, engineering, and structural—use of radiant channels offers major advantages.

Hot-weather—or hot-climate—cooling is rapidly coming to be appreciated as a factor as important as winter heating to human comfort and general vitality.[3] The human body is truly a combustion machine, but a relatively inefficient and wasteful one in which three to four times as much heat must be gotten rid of as is used by the body in all its living processes. Continuing difficulty in dissipation of this large increment of waste heat soon results in a slowing down of combustion processes in the cells and in a less energetic or more vegetative type of existence. Half of the world's population (living in tropical heat) faces constant difficulty in waste-heat dissipation, an added quarter (in the long subtropical summers) faces similar dissipation difficulties half of each year, while only the relatively small fractions of the race living in outer temperate or polar regions are free of this limiting factor on the unrestricted flow of body energy. Biologically, therefore, hot-weather cooling is more important than cold-weather heating, for the race as a whole.

Widespread appreciation of these physiological facts in recent years has lifted the air-conditioning business into the status of a major industry. It has also made imperative a critical reappraisal of convective *v.* radiant conditioning, and of the various ways these conditioning problems impinge upon structural architecture. Convective conditioning has tended to impose increasing structural and cost loads on new-building planning. Can a change-over to radiant conditioning reverse this trend and ease the general structural burden? The authors believe that their work of recent years on reflective radiant conditioning has brought such an easement, not only to the structural problems, but also to the physiological and engineering ones.

The human body—toward which most housing and conditioning efforts are directed—normally loses 60 percent of its heat by radiation, 25 percent by evaporation, and only 15 percent by convection. Herein lies the basic handicap of convective conditioning, as well as a clear indication for maximal use of radiant channels for heat transfer. The basic handicaps of convective conditioning—draftiness, noise, and high loads—arise from its need for the movement of large air volumes into and out of conditioned quarters.

Development of esthetically acceptable

* *Professor of Experimental Medicine, University of Cincinnati.*

** *Manager, Industrial Division, Reflectotherm, Inc., Cincinnati, Ohio.*

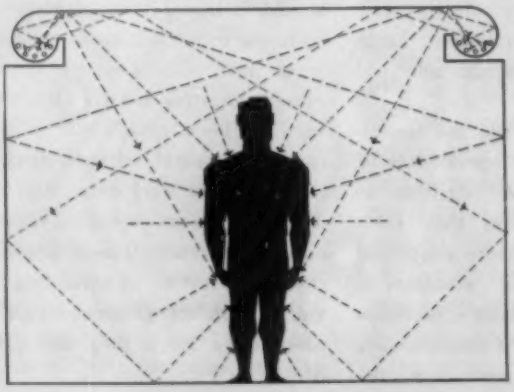
[1] *Aluminum coating applied to fabric.*

[2] *C. A. Mills, "Indoor Conditioning—Newer Physiological and Engineering Concepts," Refrigerating Engineering, January 1955.*

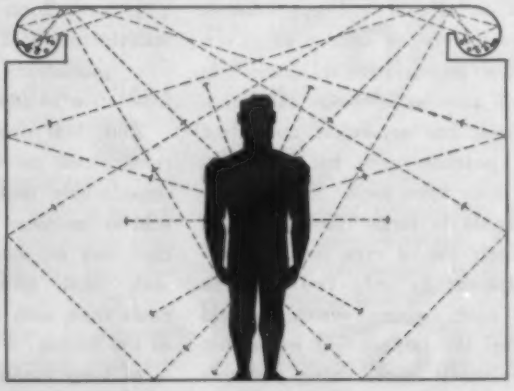
[3] *C. A. Mills,* Climate Makes the Man, *New York: Harper & Bros., 1942.*

C. A. Mills, "Temperature Dominance Over Human Life," Science, Vol. 110, 1949.

Reflective radiant heating



Reflective radiant cooling



wallpapers and window drapery material of high infrared reflectivity (but absorptive for the shorter wave-lengths of the visible spectrum) has made possible the full development of reflective radiant conditioning. The only air moved into conditioned quarters now need be only that required for ventilation, with no recirculation. Full humidity and dirt or fume control can be achieved through this fresh air introduced for the pressurizing ventilation, and the whole kept quite separate from radiant-heat input or removal.

The ceiling area offers the best room surface for radiant-heat input or removal, since it best "sees" the entire floor area of occupancy. Furthermore, convective air-heating is held to a minimum and higher efficiency of floor heating is achieved, if the radiating surface is placed horizontally overhead. Condensation difficulties arise, however, in attempting to use horizontal ceiling areas for adequate radiant cooling. These condensation difficulties can be overcome in either of two ways: (1) by placing the radiant heat-exchange elements or surfaces in a cove trough (*Figure 1*) and using infrared reflection for radiant heat exchange to the floor area, (2) by using a perforated ceiling (*Figure 2*) behind and through which cold dry air is circulated to give room-humidity control in conjunction with radiant cooling; this can also be the air for pressurizing ventilation. These are the two techniques now used in reflective radiant conditioning.

The fluid-line mechanical system needed for providing adequate reflective radiant conditioning in a given structure consists of boiler-water-chiller assembly sized to meet the calculated heating and cooling-dehumidifying loads, circulating system with automatic modulating controls, coving assembly adequate to meet the structural sensible heat-gain and heat-loss loads, electrostatic air filter with cooling-dehumidifying or prewarming coil, and blower fan to give humidity control and pressurizing ventilation of at least one complete fresh air change per hour. For the air-line system, conventional air-conditioning equipment is used in conjunction with radiant cooling panels sized and distributed to meet the structural sensible load and with the same humidity-control and pressurizing-ventilation provision as used with the fluid-line system.

Fully adequate acoustical control with the fluid-line system is attained through the sound-absorbing design of the cove-coil assembly. A complete ceiling perimeter mounting of the coves (or a 25 to 30 ft grid for large ceiling areas) carries the sound-absorbing equivalent of full ceiling coverage with the best acoustical tile for all except high-pitched mechanical noises. With the airline system and ceiling panels for radiant-heat input or removal, proper acoustical control is achieved by properly interspercing the needed sound-absorbing surfaces with the radiant-panel areas or by bordering one with the other.

TABLE I

	ARI load calculations* for conventional air conditioning with original flat roof (Btu/hr)	Reflective radiant conditioning load calculations with heat-reflective room surfacings[a] Original roof (Btu/hr)	New roof (Btu/hr)
Winter heating load[b]			
Structural heat loss	196,650	78,660	54,900
Pre-warming fresh air (1 change/hr)	20,000	20,000	20,000
Total calculated load	216,650	98,660	74,900
Observed load[c]		110,250	85,750
Summer cooling load[d]			
Structural heat gain	88,170	22,178	9,070
Cooling - dehumidifying of fresh air (1 change/hr)	21,000	21,000	21,000
6 adult occupants	2,100	2,100	2,100
Total calculated load	111,810	45,278	32,170
Observed compressor load[e]	(full capacity)	34,000[f]	32,708

a Foil wallpapers and Milium draperies with 20% radiant emissivity and 90% radiant reflectivity considered to reduce structural winter heat loss by 60% and summer heat gain by 75%

b Winter "design" conditions, 0 F outdoors and 70 F indoors

c Calculated on gas consumed at 1050 Btu/cu ft, and 70% boiler efficiency

d Summer "design" conditions, 95 F drybulb and 78 F wetbulb outdoors, 80 F drybulb and 68 F wetbulb indoors

e Calculated on gallonage and fluid temperatures in and out of chiller

f Satisfactory "design" conditioning achieved only with ½" water kept on old roof

* Air Conditioning and Refrigeration Institute, "Tentative Application Engineering Standard for Year-Round Residential Air Conditioning," Refrigerating Engineering, March 1954.

Four years of carefully controlled studies at the Reflection Point Research Residence[4]—checked by conditioning engineers from the National Bureau of Standards—have pretty well pin-pointed just what use of these principles does to the structural element in indoor-conditioning problems. The heating and cooling loads for this structure, as calculated and as actually observed, are shown (*Table I*).

Structural details for the research residence have been published elsewhere,[5] the only subsequent alteration having been the mounting, March 1954, of a second built-up roof with a few inches of freely vented air space and cellular reflective insulation between it and the original totally uninsulated roof. Conditioning performance set forth above was accomplished even though most of the sensible cooling or heating of incoming air was wasted through lack of duct insulation and through extensive contact of the cooled or heated air with the roof decking previous to its entrance into the occupied room areas. Operation of the air system alone—with all room-coil circulation shut off—results in only very slight room cooling, although its reduction in air humidity renders the sensible room heat less oppressive on a warm day.

The data on calculated and observed conditioning loads presented (*Table I*) provide sharp emphasis on the part interior heat-reflective surfacings play in a structure's conditioning problems. Such heat-reflective surfacings are needed only on those parts of the structure exposed to outside weather conditions—walls not so exposed can be surfaced in any decorative manner desired.

Full use of the Milium draperies (with an 80 percent reflectivity and 20 percent emissivity) means that broad glass exposures can be incorporated into structural planning without expensive double-glazing or prohibitive addition to conditioning loads. Draw drapes of this material, with a room equipped for radiant heating-cooling, also offer individual occupants a wide selection of temperature control without the expense of individual room thermostats.

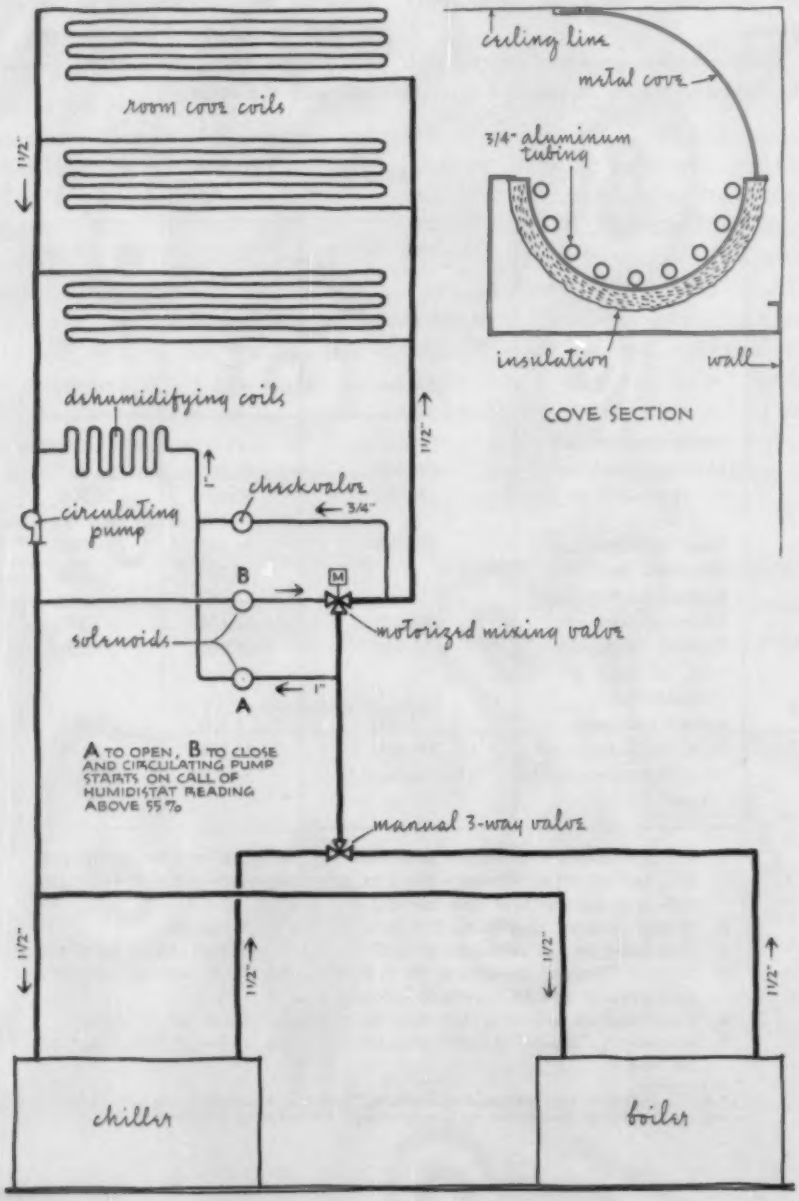
Use of the heat-reflective foil wallpapers provides a much more effective barrier to structural heat-gain in summer or heat-loss in winter than is afforded by mass-type insulation, *but only when indoor heating-cooling is accomplished through radiant channels.* Such radiant heat-barrier effect is largely lost when active air currents bathe the structural-shell inside surfaces.

When the heat-reflective foil wallpapers are used on portions of the structural shell exposed to outdoor heat or cold, in conjunction with radiant heating-cooling, there is little need for in-the-wall insulation except to turn back the hot-weather direct solar load—and for this the cellular reflective type of insulation is best used. Mass-type insulations slow down outside heat entrance into occupied quarters, through the daytime peak load, but their absorbed heat tends to be radiated inward on through the evening and night hours, providing an unfavorable contrast with the cooler outdoors. Cellular reflective insulation, placed as near as possible to the outside structural surfaces, largely prevents solar-heat storage in the structure itself and allows the structural cooling system to take prompt advantage of the evening easing-off of the solar load.

[4] *Residence at Cincinnati designed by Architect Robert A. Deshon for the author.*

[5] *C. A. Mills,* Reflective Radiant Conditioning, *Cincinnati: privately published, 1950.*

Figure 1—fluid-line system: cove detail and piping and control diagram.



Reflective radiant conditioning, as now developed and in use, thus involves basic factors of sharp structural and architectural significance. Its use carries the possibility of great structural simplification so far as heat-flow and conditioning problems are concerned. Our interest in structural impediments to heat flow have largely shifted from in-the-wall insulative values over to interior-surface radiant emissivity and reflectivity except for direct solar loads—and these two are best handled on a reflective basis. In other words, our attention has largely shifted from kinetic heat flow in *mass* materials over to the radiant reflectivity and emissivity of material *surfaces*. The structural significances of this shift are obvious and manifold.

Since the blockage of direct solar heat now remains the major structural factor in controlling radiant-conditioning loads, it is obvious that great importance attaches to the proper use of reflective insulation in roofs and sun-exposed walls, and especially to the proper use of overhangs or louvers to shield glassed openings from direct solar load. Proper attention to these simple design features and the use of reflective radiant conditioning can now reduce summer-conditioning loads by 50 percent and winter-conditioning loads by 35 percent. These reductions mean not only a saving of fuel or electric power, but also a reduction in expensive structural space required for the system's installation (*Table II*).

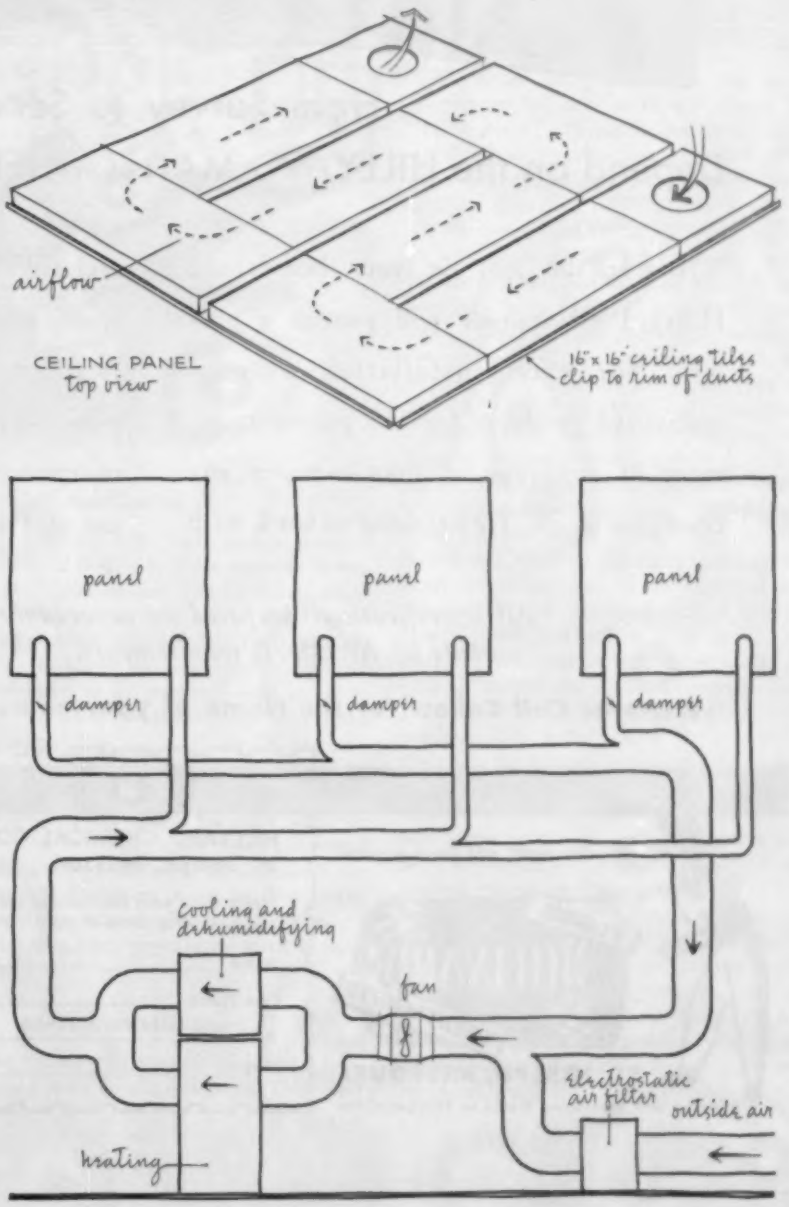
Complete year-round conditioning with pressurizing ventilation and proper acoustical and indoor-humidity control can now be provided for installed costs ranging from $1.60 to $3.75 per sq ft of conditioned floor area instead of the $3.00 to $6.00 cost range presently required for the better conventional year-round air-conditioning installations.

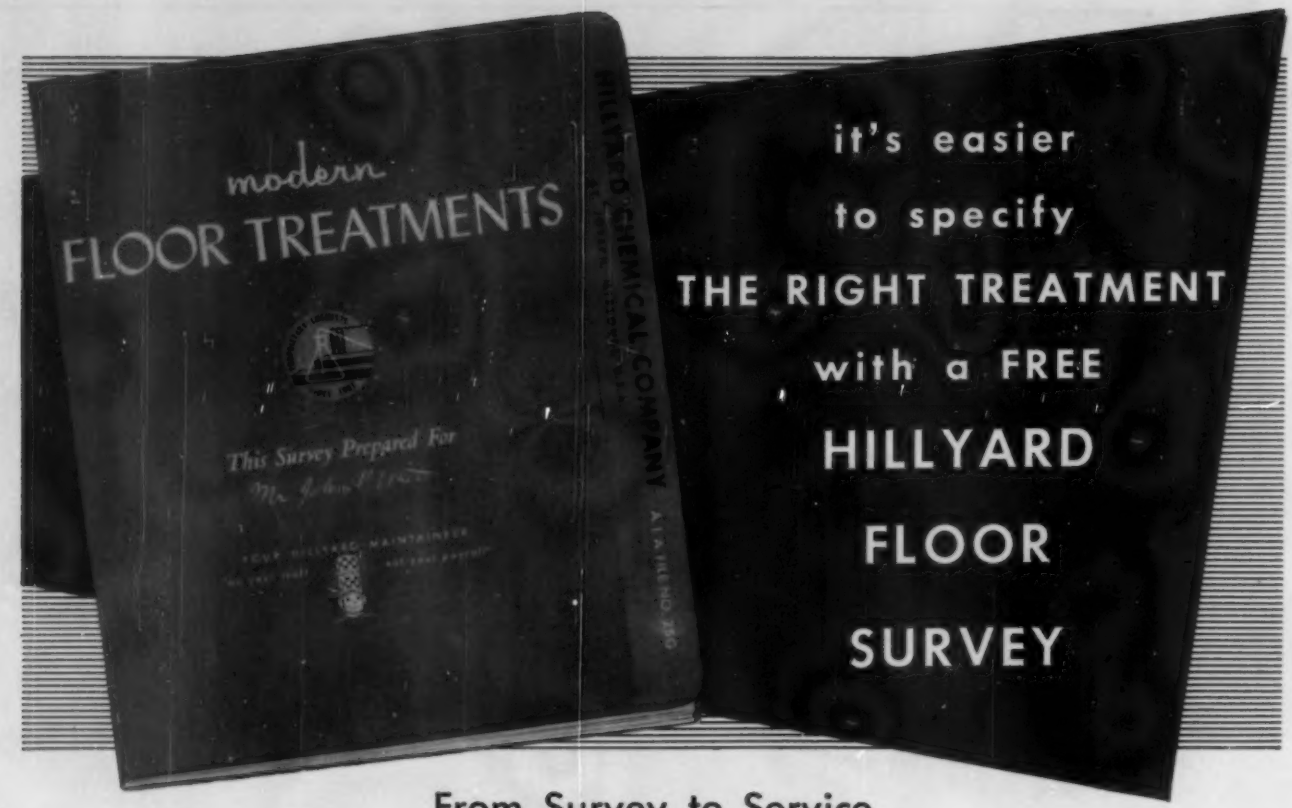
Reflective radiant conditioning carries equally great applicability for the heating-ventilation problems of colder climates free of summer-cooling needs, or for the cooling-dehumidification problems of tropical regions free of winter heating loads. In fact, it seems fully applicable and advantageous throughout the entire range of conditioning needs.

TABLE II: Calculated Heating-Cooling Loads in Commercial-Type Structures
(Samples of installations planned, in progress, or already operating)

Type of structure	Occupants (no.)	Floor area sq ft	For conventional air conditioning (ASHVE Guide calculations)		For reflective radiant conditioning (with reflective surfacings)	
			Winter heating Btu	Summer cooling Btu	Winter heating Btu	Summer cooling Btu
Office bldg. (new)	30	4,400	136,500	138,000	82,000	71,700
Office bldg. (new)	150	15,700	413,800	416,600	250,000	264,000
Apt. house (new)	68	7,300	308,000	263,600	173,300	124,500
Office bldg. (new)	50	4,200	150,000	103,000	86,650	65,650
Office bldg. (old)	65	7,400	257,000	185,000	141,800	106,100

Figure 2—air-line system: top view of ceiling panel and diagram of system.





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by Ben John Small

spec small talk

"or equal" again

I like Devoe & Raynolds' discussion of the "or equal" problem. Bet you did not see it.

"Those who specify top-quality paints with an 'or equal' clause often have difficulty in actually getting top-quality paints used for the work. Competitive manufacturers are prone to represent their products as equal to those named in the specification and it is often difficult to disprove their claims. There are certain questions, however, to ask of salesmen, which will settle many of these disputes in short order.

"*Alkyd.* In the case of masonry paints, interior or exterior enamels and interior wall paints, ask the salesman, 'Does your product contain alkyd?' If a product does contain alkyd, the analysis on the label will show either 'alkyd' or 'glycerol phthalate,' which is the technical name. The importance of alkyd resins on interior work is their toughness and nonyellowing quality: on exterior work, their toughness, water resistance, and resistance to the action of the sun. Resistance to the sun's rays means longer gloss retention and longer resistance to chalking. It is for these reasons that alkyds are used on automobiles, refrigerators, railroad cars, navy boats, and army materiel.

"*Label Analysis.* In the case of all products find out whether there is an analysis on the label. The salesman may say that his company does not want to disclose trade secrets. Such is *not a true statement,* because any laboratory can detect within a few hours all the important constituents of a paint, such as alkyd, titanium, zinc, lead, etc. Ingredients of which there are mere traces can be hidden because the law does not require that they be shown in the analysis. Therefore, if a label analysis is not shown, it can be assumed that the manufacturer realizes the product is inferior.

"*House Paint.* In the case of exterior house paints, ask the salesman, 'Is your undercoat specifically recommended for undercoating only and your finish coat for finishing only?' The answer is revealing, because the same paint is not satisfactory for both coats. For example, the undercoat should contain no zinc because it increases the possibility of peeling, but the finish coat should contain zinc for its self-cleansing qualities. The undercoat should contain lead because it increases adhesion, but the finish coat should not contain lead because it darkens from sulfur fumes and is not self-cleansing. Also the undercoat should seal the surface so that the gloss of the finish coat will be even."

Another question to ask about interior house paint is, "Has this paint been tested and given satisfaction on actual houses for a period of four years and can you show me the evidence of such tests?"

Well, don't sit there like a bump on a log. Can you?

flash

In New York City the term "incombustible material" means specifically any material which will not ignite nor actively support combustion in a surrounding temperature of 1200 F during an exposure of five minutes and which would not melt when the temperature of the material is maintained at 900 F for a period of at least five minutes. What else is new?

air-entraining

If you should ever walk into a mess of concrete it is well to know whether it was air entrained or not. The Gulick-Henderson Laboratories tells us to fill a wide-mouthed eight-ounce bottle (with straight sides) to about the one-third mark, with the cement to be checked. Add water to well above the two-thirds mark and shake vigorously for about 15 to 20 seconds. Leave undisturbed for 10 minutes. The presence of foam on the surface of the liquid after this lapse of time shall be taken to indicate air-entrained cement. When the cement is not air-entrained the foam will disappear in one to 10 minutes. Should the foam appear about the mouth of the observer, psychiatric care is indicated.

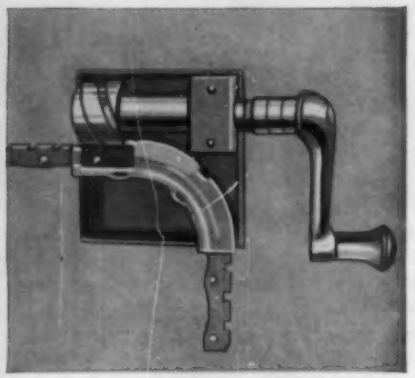
polychromatic pip

I like the way Parkwood Laminates, Inc., handled their recent brochure. They have a lively line of luscious laminates labeled "Geometry" which they have correlated with linoleum, asphalt, rubber, and plastic floor coverings. They also list by pattern number the flooring products of nine leading companies, together with their correlated plastic laminate number. It is a handy piece of literature worth having. You may now start with a plumbing fixture color number and correlate your colors around the can.

brine putty

It was at least seven years ago when Jim last worked for us. Jim was more than fond of alcohol. 'Twas many an occasion when he would report to work blotto, stinko, fried, loaded, feeling no pain, and just dead drunk. We went to great lengths in our tolerance of him for he was, as they say in the trade, a beautiful detailer and when less than stinko could draw faster than any two men we had at the time. The other day a contractor telephoned to ask what we meant by "brine putty." "What do you mean, what do we mean by brine putty?" sez I. "It's onna drawrings," sez he. "Where?" sez I. "On drawring A-27, at the heads of all windows," sez he. Sure enough, big as life, there on the drawings for a deferred project Jim worked on, he had lettered "brine putty" in several locations. What's brine putty was asked of the members of the firm between 70 and 80 years old, then the group between 60 and 70 years of age, then—oh, stop that! I talked with dozens of architects, engineers, and specification writers. They all searched their memories to no avail. One day our office boy said, "Please, sir, does not the word 'brine' suggest you had better elicit a potential explanation from those engaged in the field of refrigeration and low-temperature insulation?" (All our office boys talk like that.) I did, and here is the answer. A retired Armstrong Cork Company employe was called back temporarily to explain that brine putty is a sundry material for use with cork covering and is a mixture of cork particles and special asphalts primarily used for filling voids and large joints before the application of a seam filler which is usually an asphalt mastic compound designed to fill and seal the joints between sections of pipe covering or fitting covers. Jim probably once worked in the refrigeration field and, without telling anyone, put the note on the drawing at the heads of all metal windows to prevent through-conductivity of the cold. Brine putty-on-the-rocks anyone?

Easier to open and close—Silentite adjuster has fifteen times the operating force of the ordinary casement adjuster.



Silentite Adjuster, with housing plate removed, showing rugged construction and positive operation.

See your Curtis Woodwork Dealer and consult Sweet's Architectural Catalog for full details about the many types and styles of Silentite windows—including double-hung, casement, convertible, awning and panel windows. Literature upon request. Curtis Companies Service Bureau, Clinton, Iowa.

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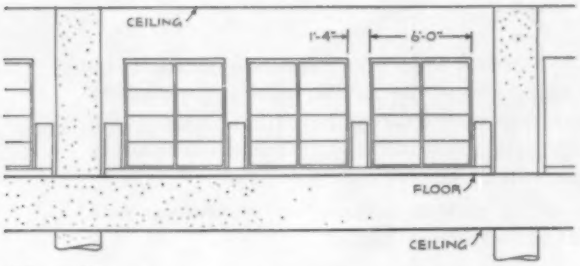
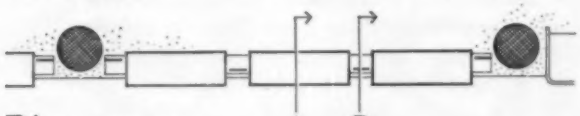
Heart of the Home

1865 CURTIS WOODWORK SILENTITE PAC-FIT the 'insulated' window

display case



Elevation

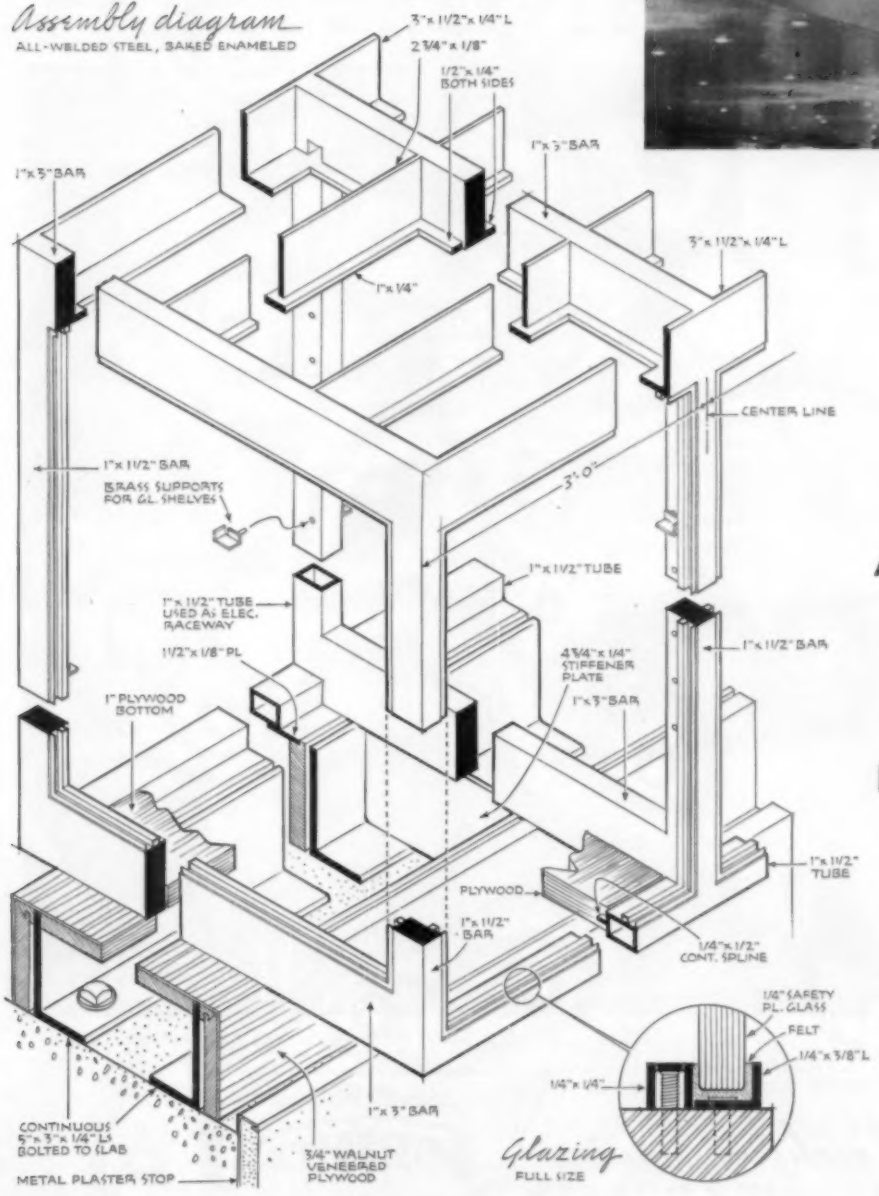


Plan 3/32" SCALE

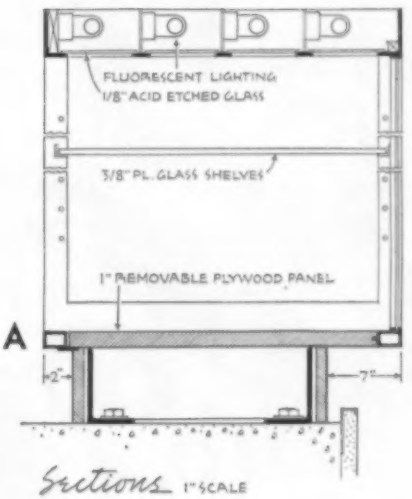
WARREN REYNOLDS

Assembly diagram

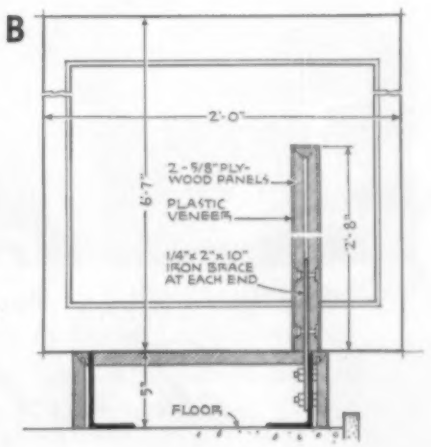
ALL-WELDED STEEL, BAKED ENAMELED



Glazing FULL SIZE



Sections 1" SCALE



DEPARTMENT STORE, Rochester, Minn.

Victor Gruen, Architect

Rudolf L. Baumfeld, Associate-in-Charge

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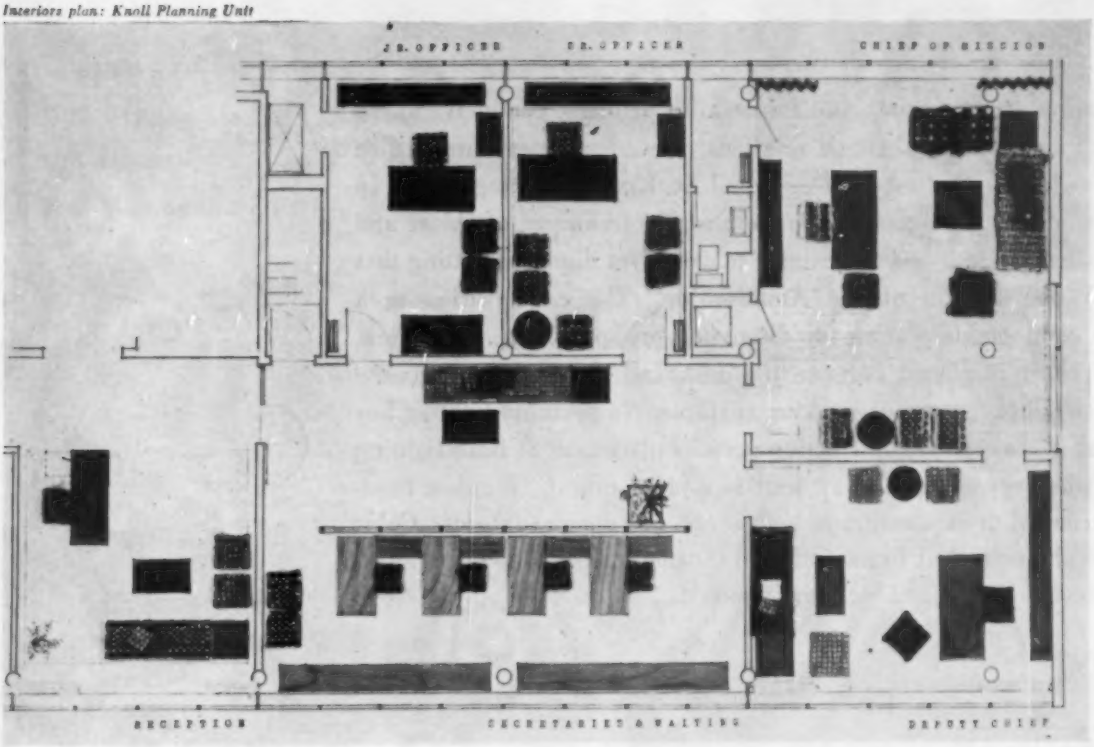
Interiors plan: Knoll Planning Unit



Louise Sloane

embassy rooms

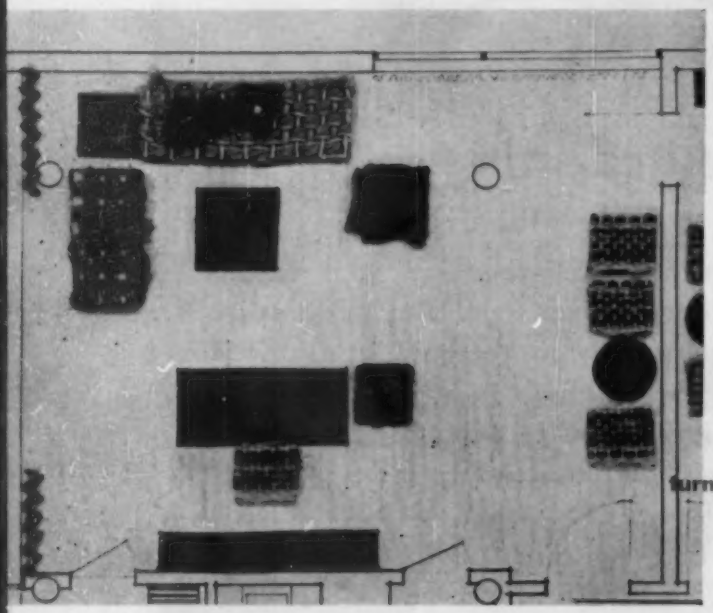
The FBO criteria for design—appropriate, distinctive, efficient—are well met in the interiors we have selected from Stockholm, Havana, and Rio de Janeiro embassy buildings. As in all commendable interior design, these settings show a sound relationship to the design character of the buildings in which the rooms exist, a sensitivity to the climate and cultural values of the regions where they are located, and above all, a fine consciousness of the activities for which the rooms will be used.

The outgoing, brisk, and lively spirit that we think of as particularly "American" is most effectively conveyed by the choice of warm, vivid colors, instead of sombre, heavy tones; glowing wood and metal surfaces combined with diversified fabric textures of varying weaves and yarns; crisply defined furniture that embodies the most recent manufacturing techniques to assure comfort and durability.

Although created to provide representative backgrounds for the conduct of U.S. diplomatic affairs abroad, these interiors reflect a kind of design thinking that is entirely applicable to offices and conference rooms at home. The inviting atmosphere of livability blended with function that has been summoned up to speak for us on foreign soil, is one that could also contribute much to our intra-domestic associations in business.

embassy rooms

A welcoming air of warmth and informality, strongly conducive to the success of agreeable diplomatic relations, pervades the executive office in the Stockholm Embassy, as designed by Knoll Planning Unit. In the selection and arrangement of furniture, the treatment of colors and textures, the designer has achieved a relaxed, yet dignified setting that expresses the mission of the Ambassador. The conversation area provides comfortable seating for discussion groups. In the work area, a swivel chair is placed between the desk and a desk-height storage cabinet, to supply generous working surfaces. No portable lighting has been used, since ceiling construction permits placement of flush lighting fixtures wherever desired. Map wall is a photo-mural. Window treatments, oriented to exposure, use both sheer and opaque fabrics. Color theme combines muted tones (off-white, camel, black-and-white) with bright accents (brilliant blue, persimmon).



furniture plan

data

furnishings and fabrics

All Furniture: Knoll Associates, Inc., 575 Madison Ave., New York, N.Y.

Window Fabrics: #K80/ white sheer; persimmon silk hand-woven/ Knoll Textiles, Inc., 575 Madison Ave., New York, N.Y.

Upholstery: #K500/8 persimmon, texture; natural texture hand-woven; #K539 black-and-white linen; blue texture hand-woven; black-and-white tweed hand-woven/ Knoll Textiles, Inc.

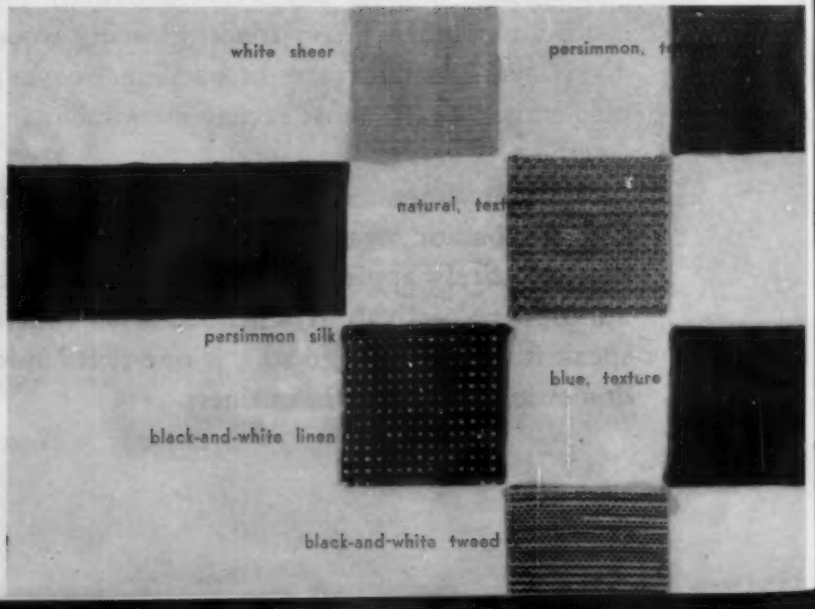
lighting

Flush Lighting Fixtures: fluorescent/ six tubes with grill/ six-, four-, two-tube intensity.

ceiling, flooring

Ceiling: 60 cm square acoustical tiles.

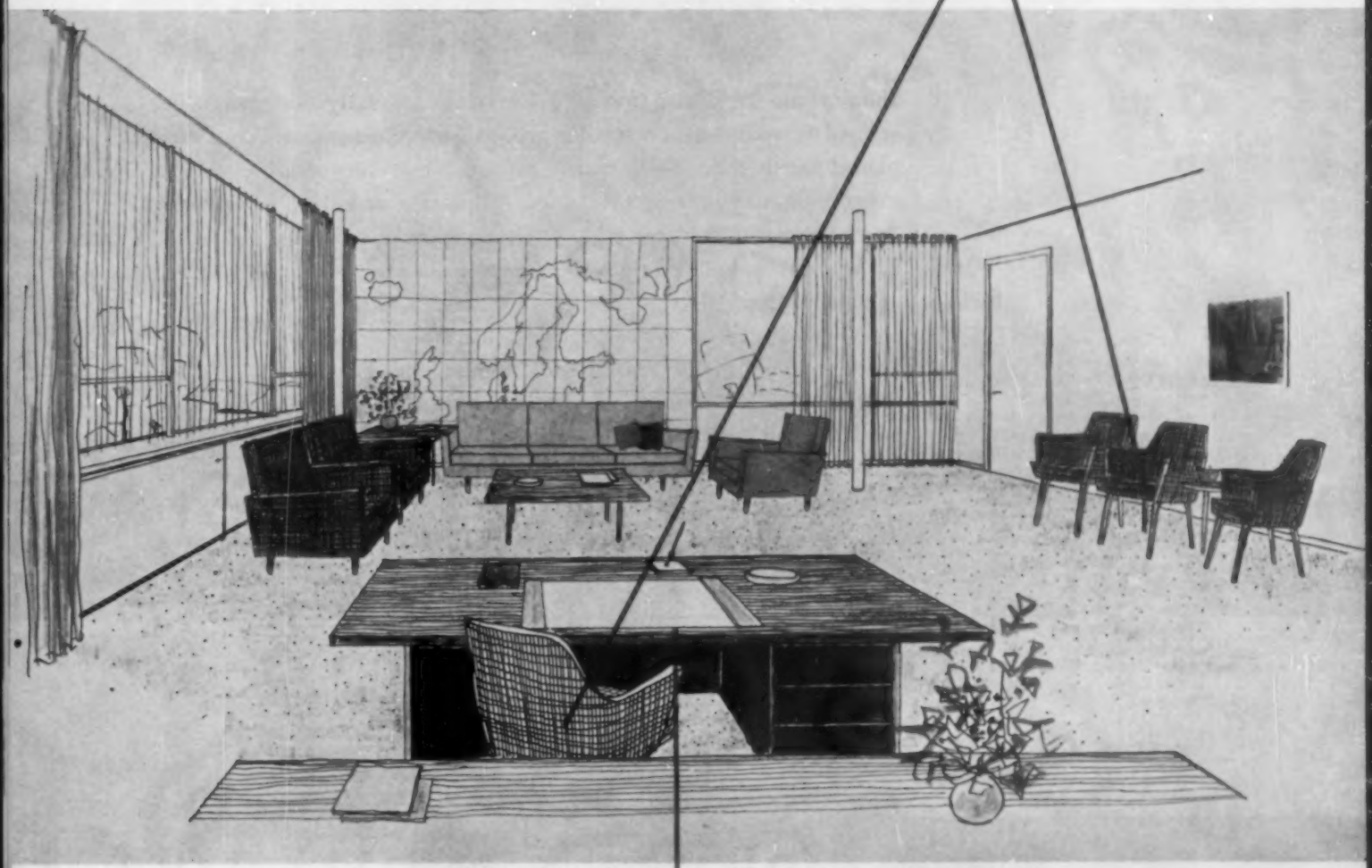
Flooring: off-white textured rug/ Sweden.



space	executive office
location	U. S. Embassy, Stockholm, Sweden
architects	U. S. Department of State, Foreign Buildings Operations
interiors	Knoll Planning Unit

side chair

swivel desk chair



executive desk

embassy rooms

space	dining and conference rooms
location	U. S. Embassy, Rio de Janeiro, Brazil
architects	Harrison & Abramovitz*
furniture	Jens Risom Design, Inc.

*For U. S. Department of State, Foreign Buildings Operations

Dominating the dining room (*below*) is a specially designed table, created to accommodate smaller groups when the two half-rounds are placed together as shown, and to expand for special occasions to seat many. Expansion is accomplished by placing drop-leaf buffet table on end wall between the two half-rounds (*plan below left*). All of the furniture is walnut, oil-finished. Chairs are upholstered in blue-green cotton-and-linen tweed.

Conference room (*acrosspage*) blends muted colors—sand, brown, black, pumpkin—for an effect of dignity and sober contrast to the tropical outdoor brilliance. The chair upholstery, of cotton strie shading from yellow to gray, accents the rich oil-finished walnut of the conference table. At the far end of the room, a seating area is unified on a sand-colored rectangular rug. The continuous sheer drapery of natural woven net covers wall columns as well as windows.

Photos (rooms): Hess

data

furnishings and fabrics

All Furniture: Jens Risom Design, Inc., 668 Fifth Ave., New York, N.Y.

Window Fabric: #L18000/ sheer woven net/ natural color/ Boris Kroll, Inc., 220 E. 51 St., New York, N.Y.

Upholstery on Dining Chairs: blue-green cotton and linen tweed; **Conference Room Chairs:** "Malibu" Avisco cotton; **Sofa:** brown and black, texture/ Boris Kroll, Inc.

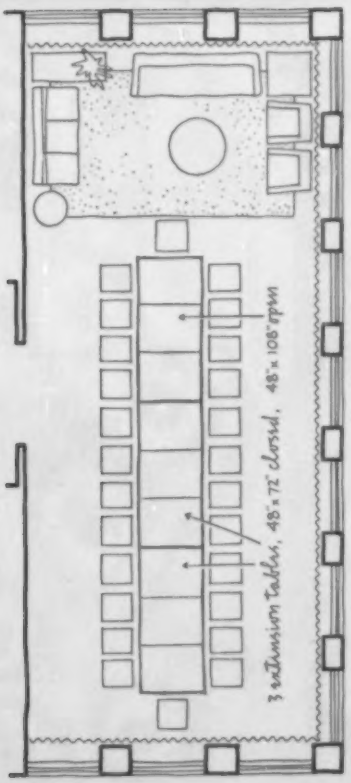
Upholstery on Love Seat: pumpkin, texture/ Dan Cooper, Inc., 30 Rockefeller Plaza, New York, N.Y.

ceiling, flooring

Ceiling: acoustic tile/ painted white.

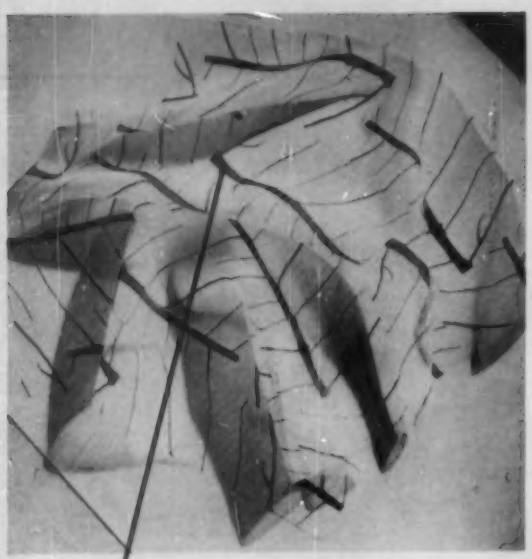
Flooring: marquetry/ Brazil; **Carpet:** "Trylon" tufted wool/ sand color/ Vogue Carpet Corp., 17 E. 53 St., New York, N.Y.

revolving-top table



walnut armchair

embassy rooms



gauze divider on overhead track

space	conference lounge
location	U. S. Embassy Office Building, Havana, Cuba
architects	Harrison & Abramovitz*
furnishings	Knoll Associates, Inc.

*For U. S. Department of State, Foreign Buildings Operations

data

furnishings and fabrics

All Furniture: Knoll Associates, Inc., 575 Madison Ave., New York, N.Y.

Gauze Room Divider: #K80/2/ pure silk, black and white print/ Knoll Textiles, Inc., 575 Madison Ave., New York, N.Y.

Upholstery Fabrics: #575 Sofa/ #K500/8, cotton, linen, jute, wool, and rayon/ persimmon; #96 Chair/ #K540 Scotch linen plaid/ black and white; #44 Chairs/ #K510/14 Avisco/ black and white/ Knoll Textiles, Inc.

walls, ceiling, flooring

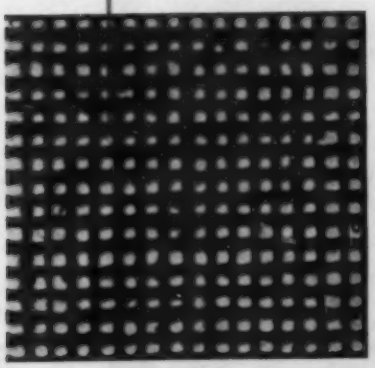
Walls: travertine marble/ off-white.

Ceiling: acoustic units applied to slab/ white.

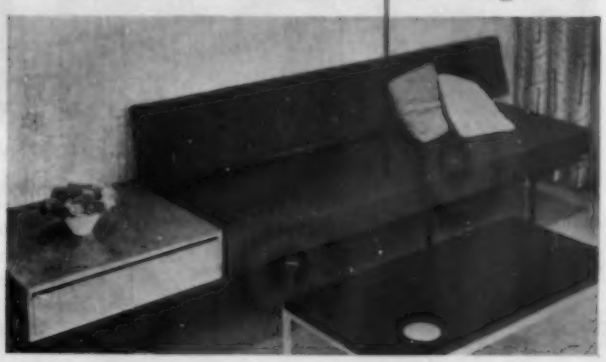
Flooring: carpeting/ off-white/ Cuba.

Since the penthouse area atop the Embassy is used both for small conferences and for social purposes, the furniture was selected for flexibility of arrangement as well as for ample seating. Color planning stresses white as foil for the naturally brilliant Cuban spectrum. Ceiling is painted white, floor is covered in white carpeting. For accent, upholstery fabrics are in clear values of blue-green, yellow, and persimmon. Light-blue, translucent silk draperies act as sun screens as well as color areas. Predominant wood is walnut. Black-and-white fabrics, in bold checks and tweed mixtures, repeat the black of oxidized steel furniture frames. *Photos (penthouse): J. Alex Langley*

black-and-white Scotch linen

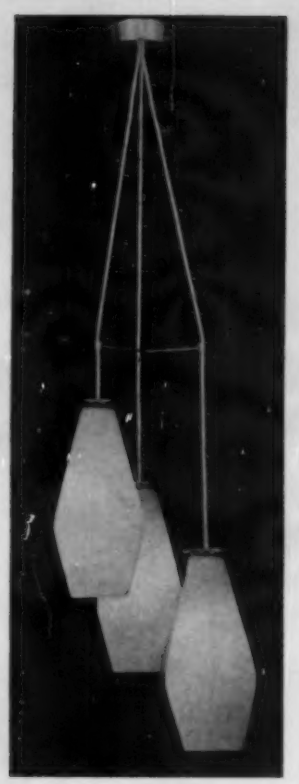


sofa with drawer unit—single base



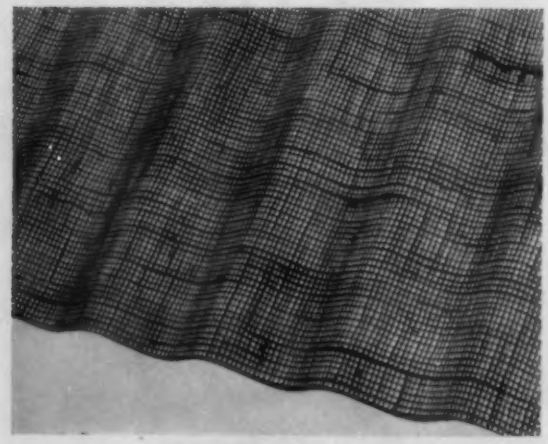
p/a interior design products

Lighting Fixtures: wall bracket (left)/ solid brass with star-shaped perforations/ two-bulb/ retail: $75; ceiling fixture (right)/ solid brass, globes of sand-blasted opal glass/ white cords/ retail: $79/ both designed by Paavo Tynell/ **Finland House Lighting Corp., 41 E. 50 St., New York, N.Y.**

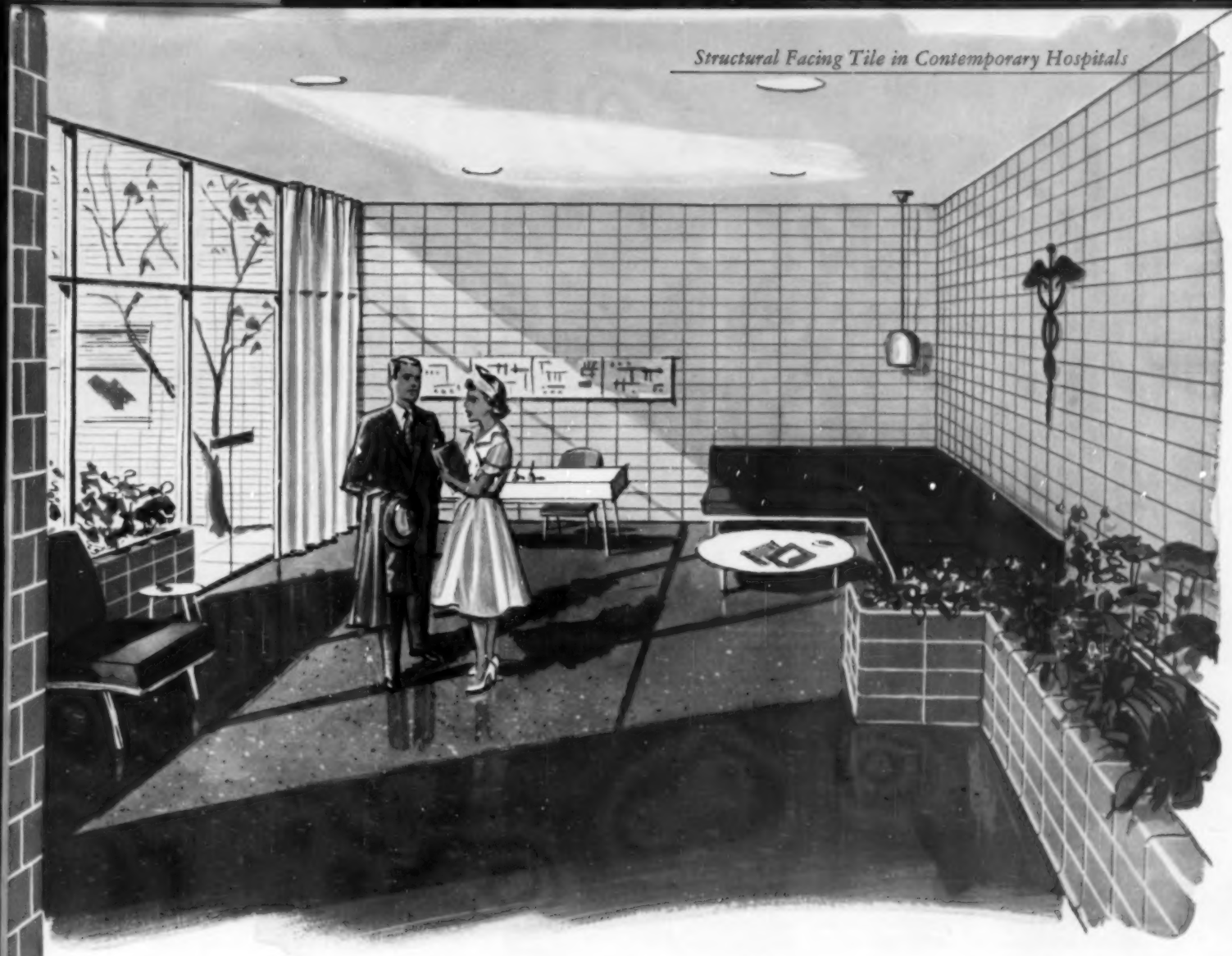


Wall Covering: "Split Strie"/ three-dimensional heavy texture/ metallic highlights/ white-and-silver, white-and-gold, brown-and-biege, off-white-and-charcoal/ permanent, washable, fade-proof/ 30" wide, double roll unit 30 ft. long/ retail: $15 per roll/ **Timbertone Decorative Co., Inc., 50 E. 53 St., New York, N.Y.**

Translucent Panels: "Rend-O-Lite" (below)/ glass-fiber and textile-reinforced polyester resin/ pattern: "Loose Weave"/ fabric: jute net/ 2½" corrugation/ 8, 10, 12 ft long/ 30" and 34" wide/ shatter-proof/ resistant to sun, moisture, temperature extremes/ can be sawed, nailed, drilled, sheared/ retail: $1.10 sq ft/ **Commodore Industries, 745 Warrington Ave., Redwood City, Calif.**



Vinyl Fabric: "Safari" sculptured texture (above) for walls or furniture/ flame-stain-soil resistant/ does not snag, scratch, chip, or peel/ vinyl electronically sealed to firm cotton backing/ may be applied to flat or curved surfaces/ in 18 colors/ Vicrtex Fabric/ **L. E. Carpenter & Co., Inc., Empire State Building, New York 1, N.Y.**



STRUCTURAL FACING TILE combines

wall and finish, helps sanitation, saves maintenance

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NATCO CORPORATION
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STARK CERAMICS, INC.
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WEST VIRGINIA BRICK CO.
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This seal is your assurance of highest quality Facing Tile.

Clear glazed Facing Tile provides light-colored, easily-cleaned walls in this hospital kitchen. Bird S. Coler Memorial Hospital, New York, N. Y. Bureau of Architecture, New York City Department of Public Works.

Light green glazed Facing Tile is used in this delivery room both to aid sanitation and furnish a helpful background color for exacting visual tasks. Augustana Hospital, Chicago, Ill.; Schmidt, Garden and Erickson, architects.

Fire-safety, cheerful look, sure protection from sound transmission are among the benefits provided by Facing Tile in this patient's bedroom. Molly Stark Sanitarium, Canton, Ohio. Harry C. Frank, Architect.

New Catalog *showing shapes, sizes, specifications, is available to you without cost. Address Dept. PA-52 of any office listed here.*

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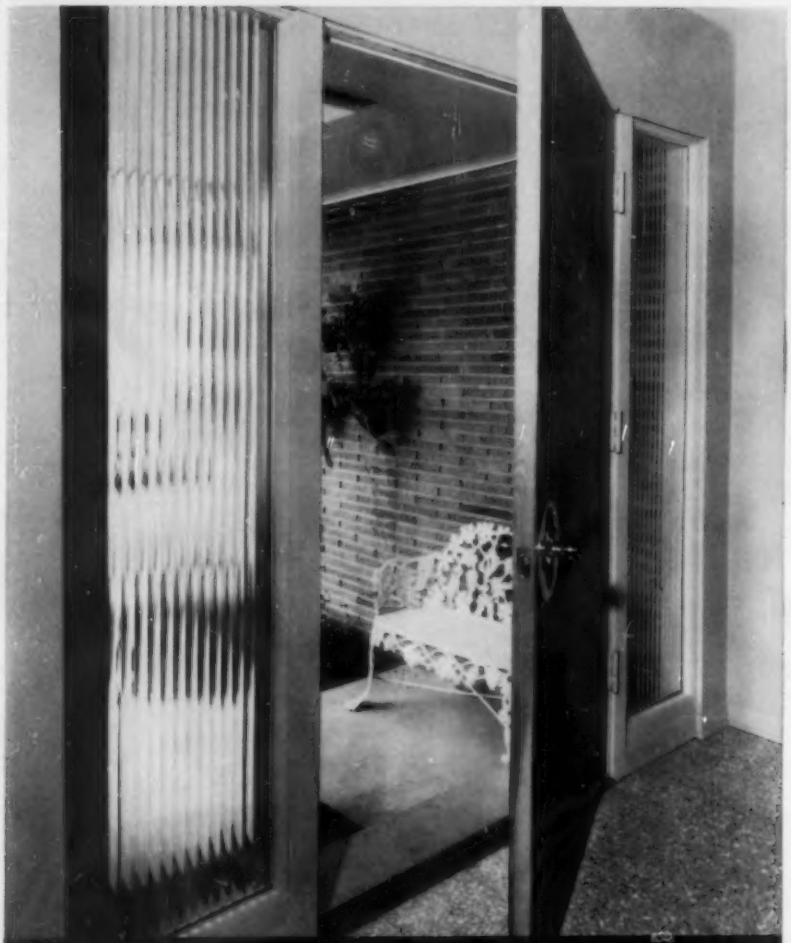
1949 Grand Central Terminal, Murray Hill 9-0270, N. Y. 17, N. Y.
2556 Clearview Avenue, N. W., Canton 5-2329, Canton 8, Ohio
221 N. LaSalle Street, Andover 3-6449, Chicago, Ill.



Panels of Blue Ridge Glass in Flutex pattern add light and beauty to this entrance. Architect: Richard M. Dodge, North Chicago, Ill.

Here a pair of *Securit*® Interior Glass Doors are flanked by panels of Blue Ridge Corrugated Glass in matching Muralex pattern.

TO MAKE A GOOD IMPRESSION

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Start with a panel of Blue Ridge *Patterned Glass* at the entrance. Beautiful, modern, practical, too, as it floods the entrance hall or reception room with light.

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608 Madison Avenue, Toledo 3, Ohio

Please send me your two books showing decorating ideas in homes and in commercial buildings.

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Stacking Chair: "Tandem"/ stacks shopping-cart fashion with minimum of handling/ frame is high-carbon special-alloy tubular-steel/ seat and back of molded-plywood in natural birch, walnut, or colors/ 16½" x 30" x 19"/ retail: $20/ **Allan Gould Designs, Inc., 166 Lexington Ave., New York 16, N.Y.**

Flexible Chairs: (left) push-back comfort due to spring-connected seat and back/ solid-ash bentwood frame/ foam-rubber cushions; (right) completely removable upholstery pad, snap-fastened/ coiled-cable-spring construction/ frame of beech/ **Fabry Associates, Inc., 6 E. 53 St., New York, N.Y.**

Chaise Longue: contoured foam-rubber cradled in steel structure/ band-steel legs provide resilience without need for springs/ custom-upholstered to order/ retail in muslin: $327/ designed by Darrell Landrum/ **Avard Furniture, 66 W. 55 St., New York, N.Y.**

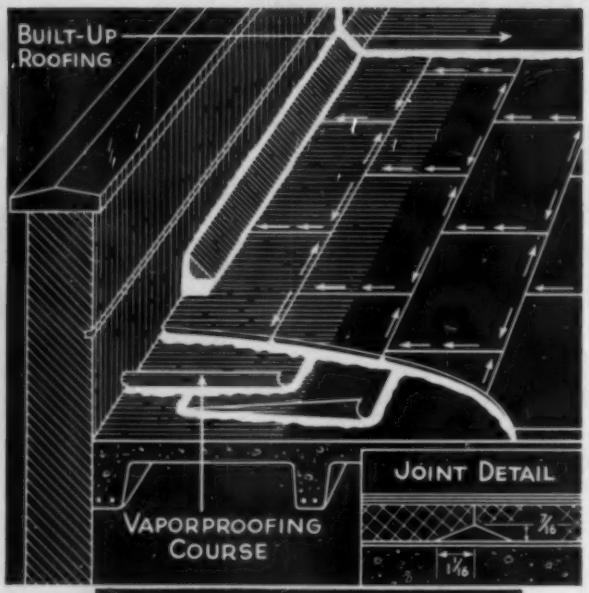
Guard against blistering...

separation of felt and insulation

with new

CELOTEX Channel-Seal

ROOF INSULATION



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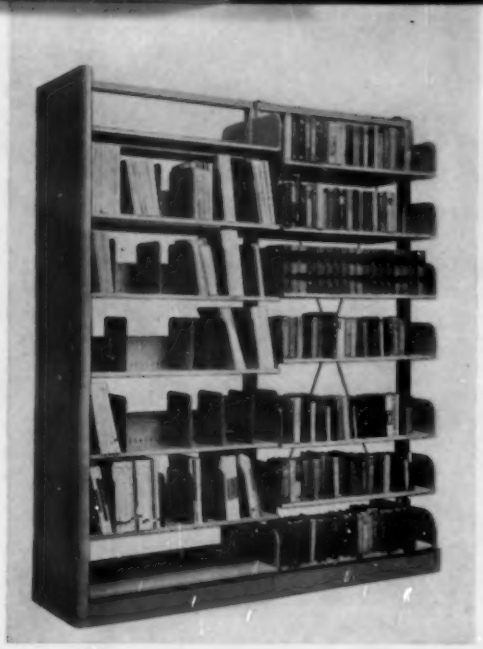
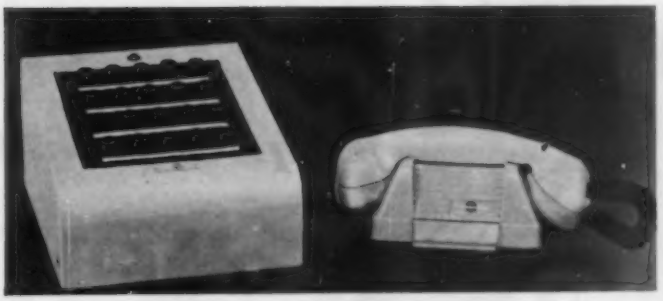
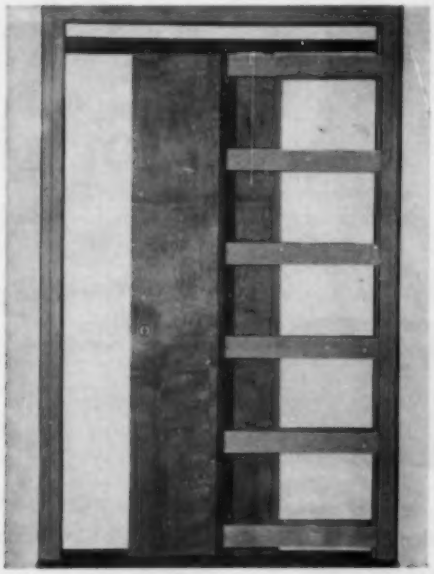


Divided Shelves for Vertical Filing: interchangeable with standard bracket-type book shelves/ for storing unbound periodicals, file folders, other vertical material/ available in 10" and 12" depths/ adjustable on slotted uprights at 1" vertical intervals/ dividers adjustable on 1" centers horizontally along shelf/ 9" and 6½" high/ **W. R. Ames Co., 150 Hopper St., San Francisco, Calif.**

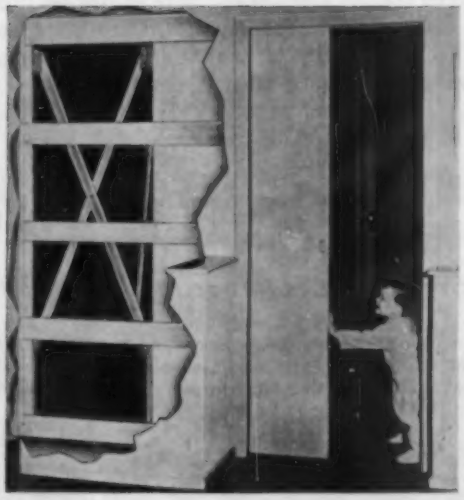
"Motel-O-Phone": private telephone system (right) for hotel-type telephone service in motels/ central station handles maximum of 20 room phones/ can be expanded up to 200 phones/ equipped with power supply plugged into any 110 V., A.C., 60-cycle outlet/ two-conductor wire/ may be connected with only a screwdriver/ gray thermoplastic finish/ **Connecticut Telephone & Electric Corp., Meriden, Conn.**





Pocket Door T-Frame: all-steel (left)/ warp-proofs wall pocket and provides steel reinforcement at the split jamb/ preinstalled extruded-aluminum track/ steel header/ adjustable hangers with twin nylon rollers/ aluminum guide-strip to eliminate grooving doors/ rubber door bumper/ #1100, one model for lath-and-plaster thick-wall construction, second model for plasterboard dry-wall construction/ for 1⅜" x 6'-8" doors in following widths: 2'-0", 2'-4", 2'-6", 2'-8", 3'-0"/ **Sterling Hardware Mfg. Co., 2345 W. Nelson St., Chicago 18, Ill.**

Fireplace: heavy-steel construction (above)/ porcelain finish inside and out, fused on at 1600 F/ chip- and shock-resistant/ new textured-matte finish in Driftwood Gray, Sunset Red, Forest Green, Matte Black/ guaranteed against fading, dulling, rusting, or burning out/ requires only 24" of wall space/ easily attached to existing flue or prefabricated chimney/ wall-mounted or set on legs/ designed by Carl Koch/ **Acorn Designs, Inc., Concord, Mass.**



Recessed Door: "Dorflo"/ suspended by scissor mechanism eliminating overhead track/ hardware anchored within vertical framework/ spring adjustment provides finger-tip action for opening and closing/ adaptable to solid, panel, glass, or heavy fire door/ ready-unit wall section shipped prefabricated for any standard door up to 3'x7'/ removable door jamb allows door to be removed or hardware adjusted/ **The Meta-Kote Corporation, 517 Gardner Bldg., Toledo, Ohio.**

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Concealed Light Sources: Two plaster-aperture recessed fixtures/ no visible ceiling trim/ "Radix" model recessed universal focalight/ simple adjustment permits angulation of beam over 37° range/ rotates within complete circle/ "Repar" model completely concealed focalight for medium and high ceilings/ three annular baffle rings plus flush-mounting without trim insure maximum light output from nearly invisible source/ both units incorporate detachable-yoke construction and no-framing method of installation/ **Kurt Versen Co., Englewood, N. J.**

"Furniture" Refrigerator: For office or home/ in natural woodgrain finishes: mahogany, walnut, oak, knotty pine, or blond/ 4 cubic feet/ 27½" wide, 36" high/ holds 9 ice-cube trays/ key-locking door handle/ available with cap sheet for under-counter installation, 35-⅜" high/ **General Air Conditioning Corporation, 4542 E. Dunham St., Los Angeles 23, Calif.**

Wall Primer: "Vapex" fast-drying vinyl-emulsion primer/ especially formulated for use on plaster and exceptionally porous wall surfaces, including all types of dry-wall construction and absorbent wallboards/ does not raise fibers of paper-covered gypsum board/ in white only, to be tinted to approximate color of finish coat with "Vapex Tinting Color" available in black, green, red, yellow/ dries dust-free in thirty minutes/ one U. S. gallon covers 500 sq ft/ **Pratt & Lambert, Inc., 79 Tonawanda St., Buffalo, N. Y.**

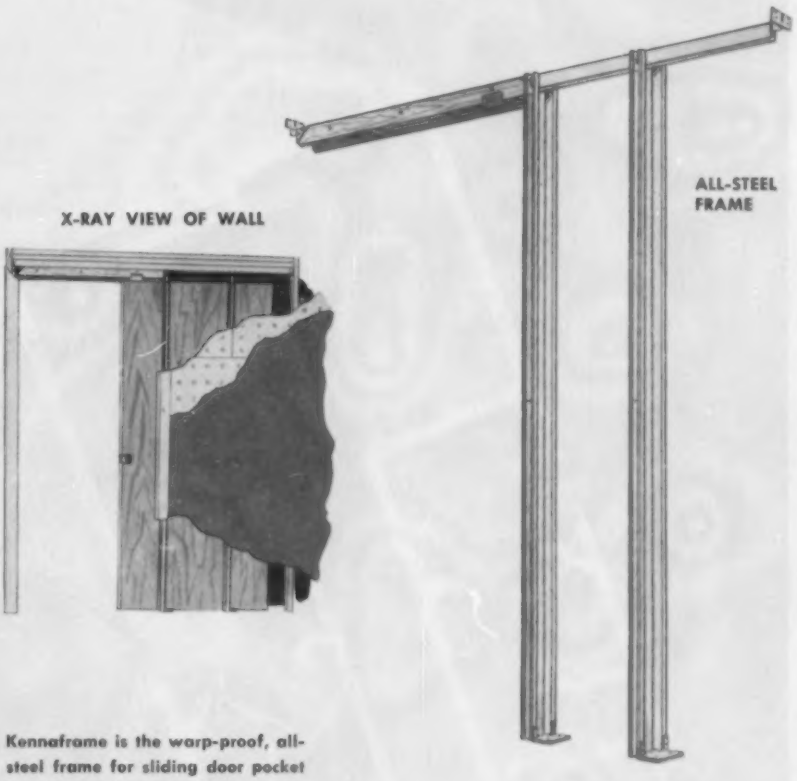
Cork Tile: "Parquetry" pattern in Standard Cork Tile/ tightly compressed cellular construction resists deep penetration by dirt or stains, provides temperature uniformity/ ⅛" gage for residential, 3/16" gage for commercial installations/ available with straight or bevelled edges/ **Dodge Cork Co., Inc., Monroe and Laurel Sts., Lancaster, Pa.**

Paper Burlap: Oriental import/ excellent natural texture/ effective substitute for more costly grasscloth, hempcloth or silkpaper/ white or natural/ retail: $4.25 per single roll/ **Kneedler-Fauchere, 451-461 Jackson St., San Francisco 11, Calif.**

High Sidewall and Ceiling Grille: "Series 200"/ distributes both cool and warm air/ completely adjustable, all louvers may be moved to give one-, two-, or four-way diffusion/ of solid section extruded aluminum/ especially wide and curved to handle air with greater efficiency/ applications: for overhead forced-air systems; for high sidewall installations; for replacement of old warm-air registers when cooling or air conditioning is added; for replacement of old-style outlets in problem areas to correct chilling or drafts; for bringing in overhead air conditioning where steam or hot water is presently being used/ also available with dampers/ **Titus Manufacturing Corp., Waterloo, Iowa.**

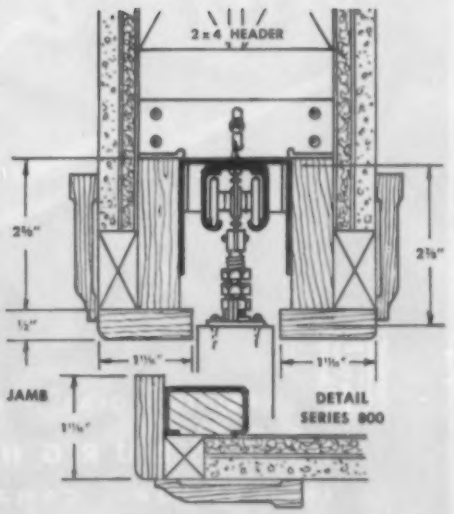
Sliding Walls: "Pan-O-Rama" sliding wall/ for use between interiors and patio or terrace exteriors/ made of heavy gage aluminum extrusions/ panels glide on ball-bearing rollers/ accommodate stock size insulating glass/ completely weatherstripped/ sizes from 6' to 24' wide/ full-size screen panel provided for summer use/ **Alwintite Division, General Bronze Corporation, Stewart Ave., Garden City, Long Island, N. Y.**

"Breathable" Fabric: Naugahyde permanently-applied-vinyl designs on fabric/ for automotive seating material or as unholstery in offices, theaters, hotels, restaurants/ tailors smoothly, durable, soil-resistant/ in four patterns: "Oriental" in 10 colors; "Quadrille" in 12 colors; "Sequin" in 12 colors, all 53" wide; "Cordex" in 7 two-toned and 3 solid colors, 54" wide/ **United States Rubber Co., Rockefeller Center, New York, N. Y.**



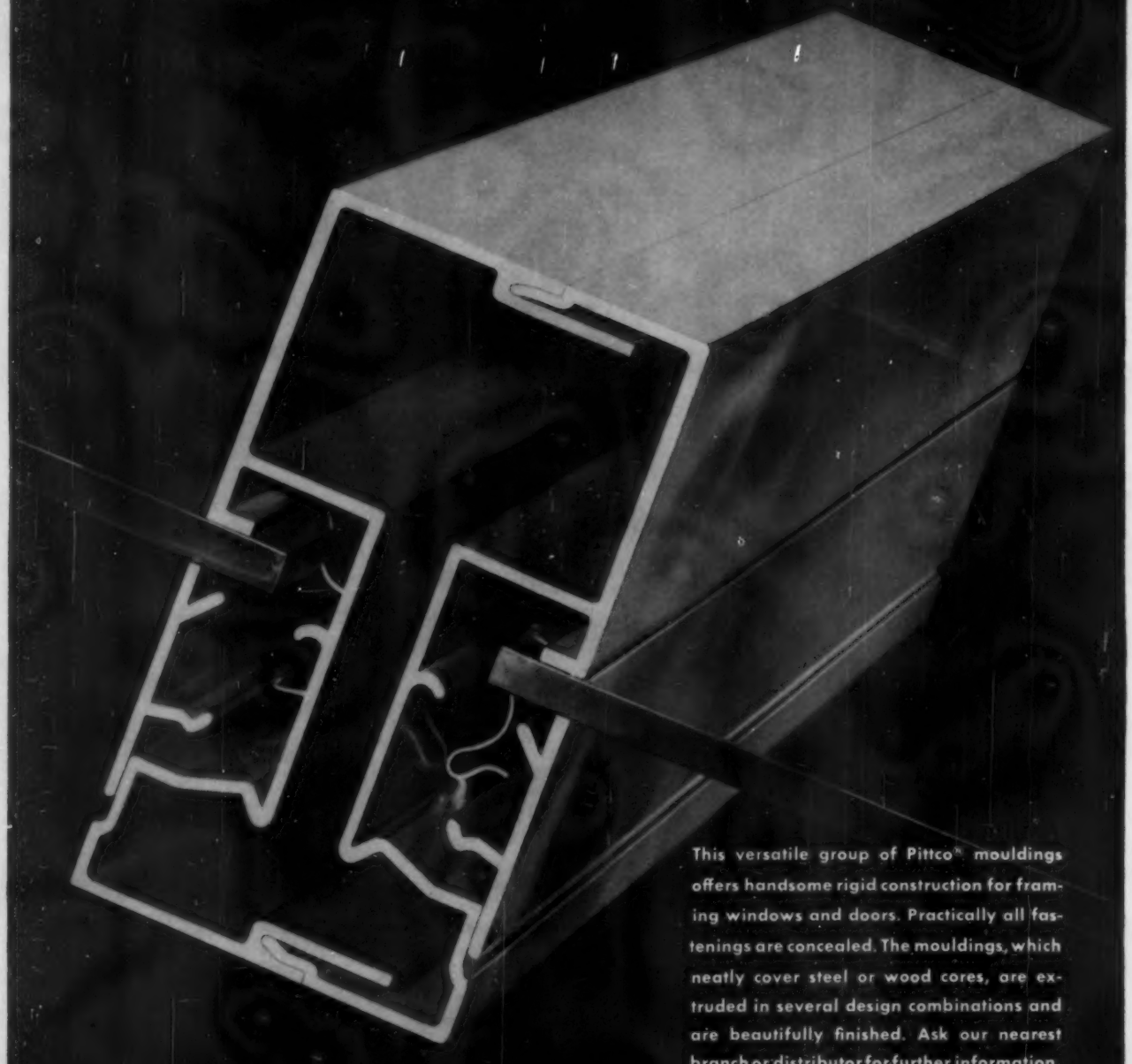
Kennaframe is the warp-proof, all-steel frame for sliding door pocket installations/ now you can specify with confidence a frame that will hold up under continuous use/ adjustable three ways, fits all 2 x 4 walls, wet or dry finish/ it takes any type of trim/ accommodates any standard 1⅜—1¾ in. door/ each prefabricated Kennaframe comes with track and adjustable hangers installed/ all the required nuts, bolts and installation details are included.

The Kennatrack "Architectural Portfolio" gives you full information for detailing this complete line of sliding door hardware/ its scaled detail drawings save you valuable time/ send today for your free "Portfolio"/ Kennatrack Corporation, Elkhart, Ind.



Pittco Recessed Framing

Concealed Fastenings



This versatile group of Pittco® mouldings offers handsome rigid construction for framing windows and doors. Practically all fastenings are concealed. The mouldings, which neatly cover steel or wood cores, are extruded in several design combinations and are beautifully finished. Ask our nearest branch or distributor for further information.

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★ *Editors' Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.*

air and temperature control

1-6. Agitair (C-100), 6-p. circular describing adjustable or fixed circular aluminum diffusers. Contains information on dampers and equalizing deflectors; gives data on location of diffusers, air capacities, radius of diffusion, and pressure requirements. Charts show mounting height, performance, and dimensions; construction details. Air Devices Inc., 185 Madison Ave., New York 16, N. Y.

1-7. Dravo Paraflo Warm Air Space Heater, AIA 30-C-43 (552), 8-p. bulletin on line of oil- or gas-fired space heaters designed specifically for commercial and industrial installations. Outlines design and construction features, application and installation information, and engineering data. Drawings, dimensioned details. Dravo Corp., 1203 Dravo Bldg., Pittsburgh 22, Pa.

1-8. Complete Line of Quality Hot Water Heating Equipment, AIA 30-C-25 (1551), 16-p. pamphlet presenting information on line of hot-water circulators, valves, and fittings. Also includes data on controls and radiation. Detailed information on each piece: dimensions, specifications, installation data, and diagrams. C. A. Dunham Co., 400 W. Madison St., Chicago 6, Ill.

1-9. Lawler Type "S" Thermostatic Temperature Regulators, AIA 29-D-21 (S-6), 12-p. guide explaining use of direct-acting, reverse-acting, and three-way type temperature regulators. Engineering design data; charts of temperature ranges and capacities; diagrams and roughing-in dimensions. Lawler Automatic Controls, Inc., 453 N. MacQuesten Pky., Mt. Vernon, N. Y.

1-10. Summer Air Conditioning (2), 52-p. manual covering design and installation of air conditioning for new and existing residences. Outlines design procedure and gives recommendations for construction. Tables include data on area of windows, heat gain factors for various types of construction, and average daily temperature range for entire U. S.; construction diagrams. National Warm Air Heating and Air Conditioning Assn., 145 Public Square, Cleveland 14, Ohio. ($1)

★ **1-11. Trane Products (PB-290),** 36-p. bulletin covering all new heating and air-conditioning products as well as existing ones with pictures and description of each. Designed to serve as index, detailed data on any product is available in separate booklets. New products include additions to air conditioning line and baseboard convectors. The Trane Co., La Crosse, Wis.

construction

2-13. Alcoa Ribbed Industrial Siding Sheet, AIA 12-C (300-1), file folder containing detail sheet on aluminum siding. Fasteners, closures, corners, and flashing are detailed. Also includes handy specification check list; tables of coverage and permissible loading. Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa.

2-14. Timber Construction Standards, AIA 19-B, 54-p. outline of recommended standards and specifications to promote better design, construction, and economy in timber structures. Contains specifications for design of structural timber framing, minimum standards for fabrication and erection of structural timber, and code of standard practice. American Inst. of Timber Constr., Suite 100, 1757 K St., N. W., Washington 6, D. C. ($2; $1.50 to AITC members.)

★ **2-15. Carey Cold Process Built-up Roofs (6203),** 20-p. specification guide for roofs. Contains general requirements for cold-process roofing specifications and detailed requirements for roofs on wood, gypsum, concrete, or steel. Also provides information on vapor barrier which prevents spread of fire. Index for selection of proper roofing material. Philip Carey Mfg. Co., Cincinnati 15, Ohio.

2-16. Technical Report on Schoolroom Acoustics, 8-p. pamphlet containing report by Bolt, Beranek, and Newman, consultants in acoustics. Discusses problems of sound-absorbing materials versus sound reflecting materials for classroom activities. Gives drawings and data on combined use of absorbing and reflecting materials. The Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio.

2-17. Permalite Specification Manual, 218-p. notebook prepared exclusively for architects and structural engineers on lightweight concrete used for roof decks or insulating fill over structural decks. Many charts, tables, and drawings illustrate design procedure; instructions for writing specifications for several types of deck construction. Perlite Div., Great Lakes Carbon Corp., Los Angeles, Calif.

2-18. Aluminum Building Products (100), 24-p. catalog of aluminum products including siding, flashing, gutters, and reflective insulation. Features cross-corrugated aluminum roofing manufactured in rolls. Contains basic product data: dimensions, short-form specifications, drawings, and installation instructions. Quaker State Metals Co., P. O. Box 1167, Manheim Pike, Lancaster, Pa.

2-19. Brick and Tile Walls Reduce Air-Conditioning Loads, 8-p. preliminary report on research program being conducted to determine accurate measurement of heat-storage capacity of brick and tile structures. Contains general information on heat-storage capacity, test cases, design recommendations, and summary of findings. Drawings of several types of masonry walls. Structural Clay Products Inst., 1520 18 St., N. W., Washington 6, D. C.

(Continued on page 151)

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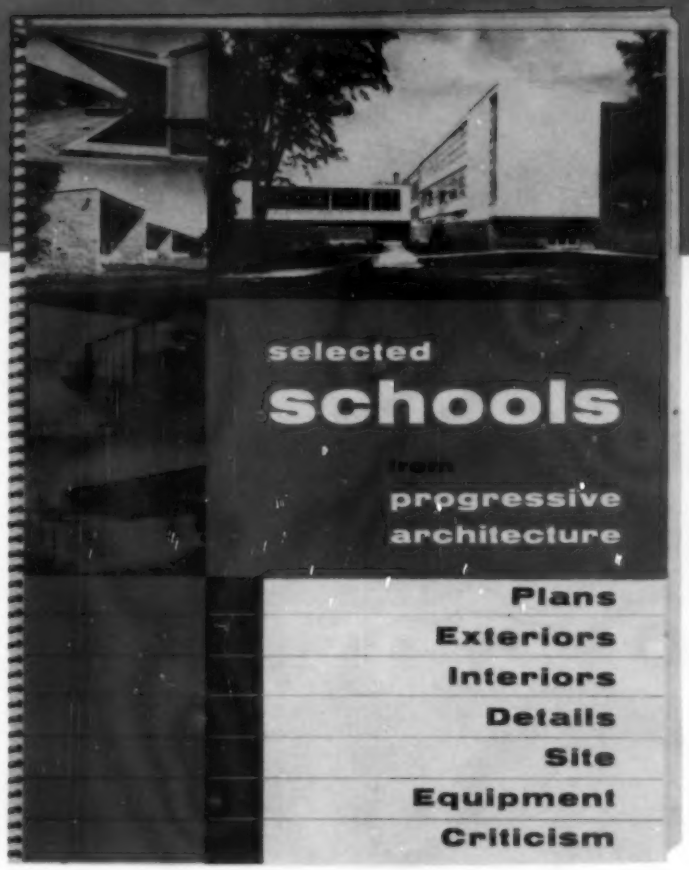

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doors and windows

3-8. Specifications for Aluminum Windows, 24-p. guide for specifying residential-type aluminum windows. Covers qualify of materials, construction, strength of sections, and minimum air infiltration requirements. Gives instructions for preparing short-form specs or master specification; lists standard sizes and types of windows manufactured. Aluminum Window Mfrs. Assn., 74 Trinity Pl., New York 6, N. Y.

3-9. Fenestra Hollow Metal Doors: Swing and Slide, AIA 16-A (DO-2), 20-p. booklet presenting complete description of swinging and sliding doors. Outlines construction features, locks, hardware, and installation details. Information on sliding closet doors and hardware; dimensions and specifications. Detroit Steel Products Co., 2250 E. Grand Blvd., Detroit 11, Mich.

3-10. Glass for Construction, AIA 26-A (SA-54), 28-p. pamphlet on glass used in construction: plate, tempered plate, insulating, bent, and structural glass. Gives data on patterned and heat-absorbing glass; contains standard sizes, specifications, and technical information. Photos, charts and details. Libbey-Owens-Ford Glass Co., Toledo 3, Ohio.

3-11. Per-Fit Aluminum Windows, 8-p. brochure detailing double-hung and sliding windows primarily for residential use. Gives many full-size details of mullions, picture windows, and double-hung windows. Charts show rough and finished dimensions and muntin arrangements. Per-Fit Products Corp., 1212 E. 52 St., Indianapolis 5, Ind.

3-12. Truscon Aluminum Awning Windows, AIA 16-E (A-652), 20-p. catalog featuring awning windows. Describes hardware, finish, special operators, screens, and storm sash. Gives information on picture-window units, special mullions, and fixed-panel combinations. Full-size installation details; specifications; sash dimensions and glass sizes. Truscon Steel Div., Republic Steel Corp., 1315 Albert St., Youngstown 1, Ohio.

electrical equipment, lighting

4-5. BullDog Pushmatic Electri-Centers (PM-355), 24-p. manual explaining panelboards to suit wide variety of requirements and circuit breakers featuring separate elements for positive protection of branch circuits and appliance cords. Typical wiring diagrams and exploded views of panelboards. BullDog Electric Products Co., 7610 Jos. Campau Ave., P. O. Box 177, Detroit 32, Mich.

4-6. Lighting Fixtures, AIA 31-F-152 (2), 28-p. catalog of contemporary lighting fixtures illustrating recessed, surface-mounted, and fluorescent units for commercial or residential use. Also shows line of floor, wall, and table fixtures and chandeliers. Drawings of each unit; color chart. General Lighting Co., 248 McKibbin St., Brooklyn 6, N. Y.

4-7. Effective Stage Lighting, AIA 31-F-25 (ES-54), 12-p. guide describing simplified system of stage lighting for elementary-school auditoriums. Suggests mounting and connecting of lighting units to portable switchboards with dimming controls. Wiring layout for stage of typical small elementary-school auditorium; schedule of portable and permanently installed elements. Hub Electric Co., 2255 W. Grand Ave., Chicago 12, Ill.

4-8. Miller Custom-Built Lighting Fixtures, AIA 31-F-2, 21-p. file folder enclosing 21 sheets on incandescent and fluorescent units designed for specific purposes. Drawings, sections, dimensions, and description of each fixture. The Miller Co., Meriden, Conn.

4-9. Sola Mercury-Vapor Lamp Transformers (MV-208), 4-p. folder on constant-wattage transformers for outdoor industrial and commercial applications. Gives general characteristics, performance

(Continued from page 147)

(Continued on page 152)

Halsey Taylor Counter-Type Fountain class-room unit, 20"x 30", with receptor of acid-resisting, gleaming porcelain cast iron or lifetime stainless steel. Chromium Plate Glass Filler and Fountain Head. All the usual Halsey Taylor sanitary features. Specify No. 4840.

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AS-40

p/a manufacturers' literature

(Continued from page 151)

data, and specifications. Connection diagrams; dimensions; and tables comparing performance data of regulated and conventional non-regulated ballasts. Sola Electric Co., 4633 W. 16 St., Chicago 50, Ill.

★ **4-10. Wakefield Lighting Units,** AIA 31-F (55), portfolio containing 10 catalogs on lighting equipment. Covers luminous ceilings of modular type or with corrugated methyl-methacrylate sheeting. Provides material on surface-mounted or recessed ceiling fixtures, hanging units, and industrial fixtures. Drawings, large-scale installation details, technical data, and specifications included in each booklet. F. W. Wakefield Brass Co., Vermilion, Ohio.

finishers and protectors

5-1. Arcotone Interior Wall Finishes (C-124), 4-p. brochure on color system devised especially for schools, hospitals, and offices to reduce eye fatigue caused by predominance of any one color in working light. Color chips with light reflectance percentages. The Arco Co., 7301 Bessemer Ave., Cleveland 27, Ohio.

insulation (thermal)

6-4. Insulation for Piping and Equipment (IN6.A2), 20-p. publication giving information on glass-fiber insulation for piping and equipment with temperatures up to 1200 F. Outlines types of insulation materials, properties, limitations, and advantages for specific uses. Tables of thermal conductivity and recommended thicknesses. Owens-Corning Fiberglas Corporation, Toledo 1, Ohio.

sanitation, plumbing, water supply

7-2. Dur-Ace Plastic Pipe (80A), 6-p. folder describing plastic pipe, fittings, and valves for general purpose use. Includes data on threading, installation, forming, and bending. Drawings; tables showing properties, chemical resistance, standard sizes, and pressures. American Hard Rubber Co., 93 Worth St., New York 13, N. Y.

7-3. Zurn Roof Drains, AIA 29-C-3 (54-1), 52-p. manual containing infomation on determining number, size, and location of drains. Features equipment for snow removal, cloudburst, and roof expansion; describes drainage for deck parking and outdoor terraces. Details of installation in various types of roof constructions; drawings and dimensions. Plumbing Div., J. A. Zurn Mfg. Co., Erie, Pa.

specialized equipment

8-1. Square Sterilizers (C-162), 8-p. pamphlet presenting automatic hospital sterilizers, square in shape. Gives sizes of recessed or cabinet-mounted units for use with steam or electric heat. American Sterilizer Co., Dept. SS, Erie 6, Pa.

8-2. Amweld Bleachers (BL-100), 4-p. brochure describing gymnasium seating which may be easily folded and stored. Provides data on design and construction of steel-supported bleachers; tables of load capacities and dimensions. Institutional Products Div., The American Welding Co., 100 Dietz Rd., Warren, Ohio.

8-3. Flexalum Venetian Blinds, AIA 35-P-3 (A424-1), 16-p. booklet illustrating blinds with aluminum-alloy slats, reinforced-vinyl tape, and nylon cord. Describes operating mechanism; gives results of light and solar-radiation studies. Specifications; details of concealed installation. Hunter Douglas Corp., 150 Broadway, New York 38, N. Y.

surfacing materials

9-2. Vikon Wall and Ceiling Tile, 12-p. booklet showing tile suitable for use in kitchens, bathrooms, laundries, and utility rooms. Colored drawings illustrate steel, aluminum, plastic, and copper tiles in many colors and textures; gives dimensions, thicknesses, and description of finishes. Vikon Tile Corp., Washington, N. J.

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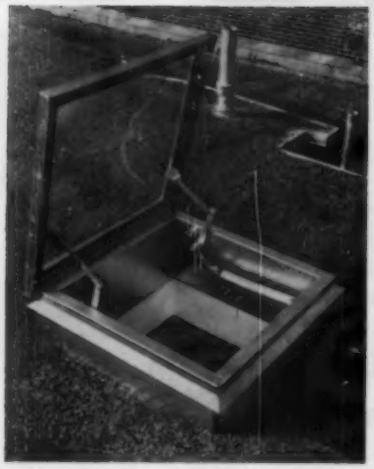

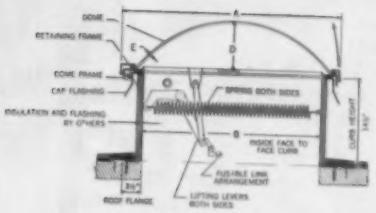

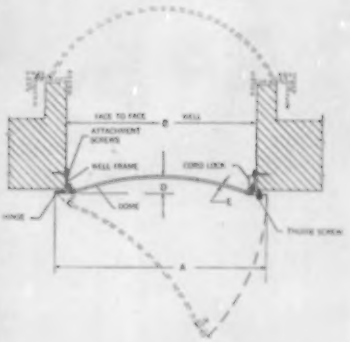

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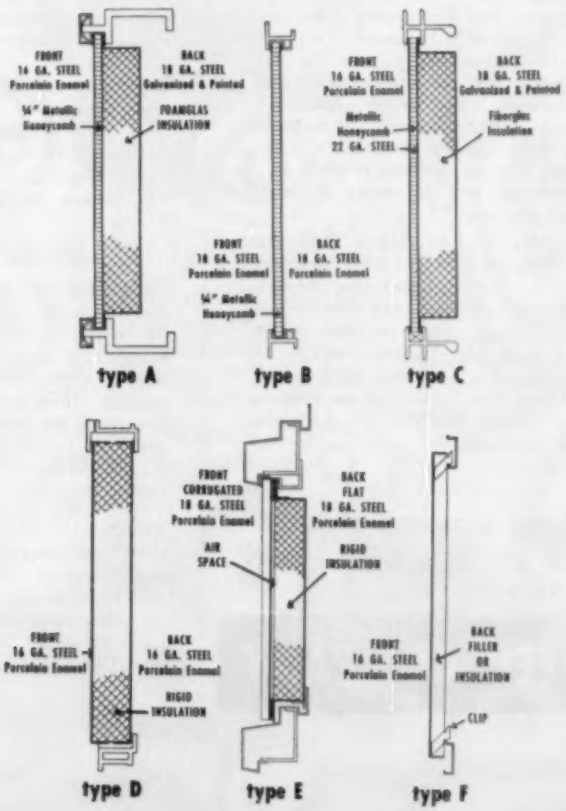
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Why the *HAMILTON HOTEL* swung back from Swing to *REVOLVING DOORS*

IN 1947 — after more than a quarter-century of constant service, original revolving door entrances to the Hamilton Hotel building were replaced with swing doors. But today, revolving doors are back, for these reasons as reported by Owner Mr. Samuel Leeds:

"Guests complained about cold winds whipping through the lobby when the swing doors were opened . . . the lobby required frequent cleaning and redecorating because of outside soot and grime that poured in . . . Cocktail Lounge customers avoided seats near the swing door entrance, even walked out rather than sit in drafts every time it was opened. Investigation revealed that in 1947 revolving doors had been removed from both the main entrance and the Cocktail Lounge. Apparently, our problems began then."

How well the return to revolving doors solved the Hamilton's problems is summed up in these excerpts from the same letter:

"We believe both the lobby and Cocktail Lounge will present a more hospitable welcome to guests . . . are confident our heating and decorating bills will be drastically reduced . . . are certain that every seat in the Lounge will be comfortable and conducive to better business, because people won't be plagued by cold wintry drafts. In summer, too, we believe the air conditioning will be more efficient and pleasant."

Thus, Mr. Leeds' letter lists the basic reasons why most leading hotels — office buildings, department stores, banks, and institutional buildings, too — use these doors that are "always open, always closed"; *why over 50% of all revolving door installations replace swing doors.* See Sweet's Architectural File *now.*

INTERNATIONAL
ALWAYS OPEN ALWAYS CLOSED
VAN-KANNEL

REVOLVING DOOR ENTRANCE DIVISION
2003 EDGAR ST. EVANSVILLE 7, IND.

INTERNATIONAL STEEL COMPANY

p/a products

(Continued from page 155)

air and temperature control

Console Heaters: newly styled by Herman Nelson, cabinet-type heating unit also features two-speed key switch and removable front panel for convenient access to all parts. Heater may be installed on floor, wall, or ceiling; discharges air upward, downward, or horizontally. Available in eight colors and in many two-tone designs. Heating & Ventilating Dept., American Air Filter Co., Inc., 215 Central Ave., Louisville, Ky.

Weathermaker Air-Conditioning Units. new line of packaged air-conditioning units requiring no water, is designed especially for stores and offices where water supply is limited. Air-cooled unit, which provides cooling, dehumidification, filtering, and circulation of air, may be installed directly in space to be cooled, or air may be distributed through ductwork. Manufactured in sizes from 2 to 7½ hp. Carrier Corp., Syracuse, N. Y.

Sectional Duct Furnaces: new series of large-capacity duct furnaces features sectional assembly to simplify installation. Compact heat exchanger includes combustion controls; equipment for circulating, cooling, cleaning, and humidification are selected to meet requirements of particular installation. Small-capacity units range from 50,000 to 125,000 Btu; large-capacity units from 150,000 to several million Btu. Reznor Mfg. Co., Mercer, Pa.

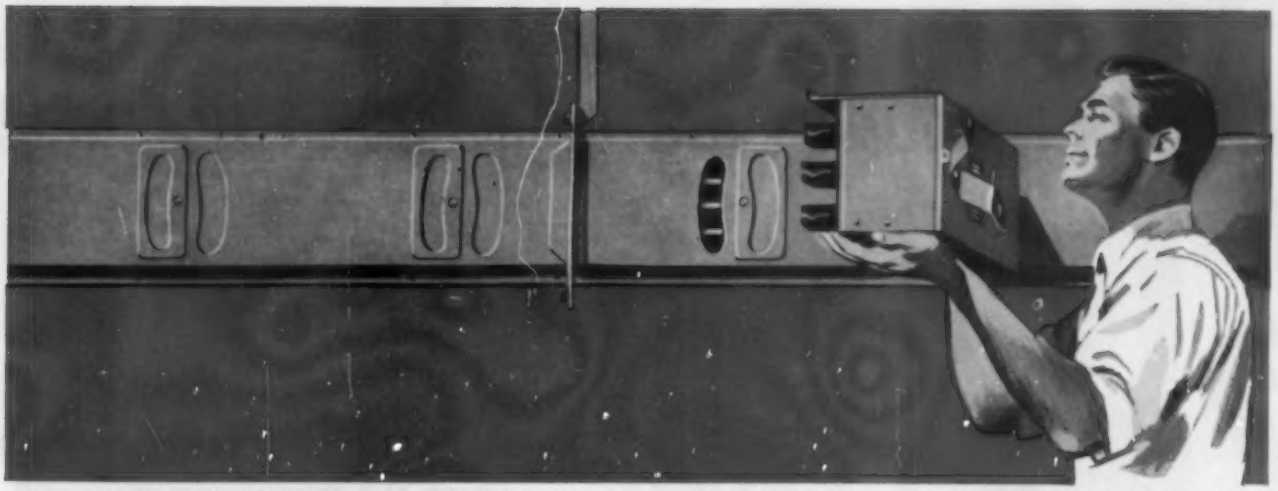
Multi-Zone Air-Conditioning Units: can supply individual temperature and humidity requirements of 12 zones in one building, regardless of variations in construction, occupancy, or wind and soalr exposure. Designed primarily for commercial and public buildings, unit is also applicable to large residences where individual control is desired. Available in sizes ranging from 1665 to 21,000 cfm. Sturtevant Div., Westinghouse Electric Corp., Dept. 237, 200 Readville St., Hyde Pk., Boston 30, Mass.

construction

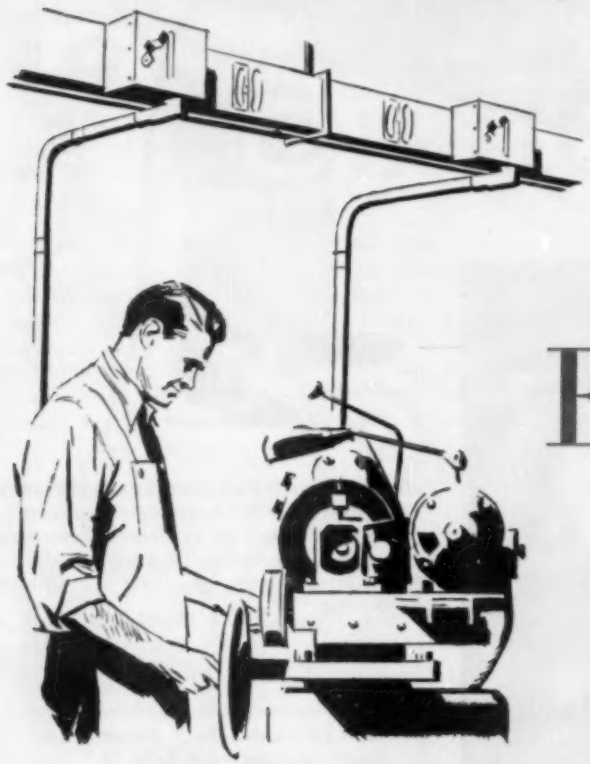
Color-Impregnated Aluminum: building panels in fade-resistant colors introduced by special electrochemical process are claimed to require no exterior maintenance, nor will color finish chip, peel, or rust. Blue, gold, brown, gray, and yellow hues are now available; other colors are still under development. Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa.

Fire-Snuf: self-extinguishing translucent structural panel is especially suited for skylighting in industrial buildings, schools, and institutional buildings. Manufactured of self-extinguishing resin, material has been rated as "slow burning." Available in all standard roofing and siding corru-

(Continued on page 160)



PLUG-IN POWER WHERE YOU NEED IT . . . IN MINUTES! Each section of plug-in duct is 10 feet long with five plug-in openings on each side. Exclusive scarf-lap construction joins sections in a rigid form. Standardized plugs are fastened to casing flanges at plug-in openings. Reinforced fingers engage bus bars for positive pressure contact.



BULLDOG PLUG-IN DUCT WITH ALUMINUM CONDUCTORS GIVES

Lightweight, Flexible Power

at low cost!

CUTS DOWNTIME! 100% REUSABLE! SAFER, MORE EFFICIENT POWER!

Your clients are always one step *ahead* of plant realignment or modernization plans with BullDog Plug-in Duct. It's the completely flexible, reusable electrical distribution system that provides instant plug-in power wherever, and whenever, it's needed.

Simple to install, rugged plug-in duct allows circuits to be swiftly added or removed without rewiring. Downtime is cut, too! New tool setups can be made, machines shifted and lighting revamped, without interrupting the flow of power.

Whatever the power requirement, present or future, your customers are always prepared with BullDog Plug-in Duct. You'll find BullDog your first source for the most efficient, most modern electrical distribution equipment. See your nearby BullDog Field Engineer or Qualified Distributor. Or write: BullDog Electric Products Company, Detroit 32, Michigan. ©BEPCO

IF IT'S NEW
. . . IF IT'S DIFFERENT
. . . IF IT'S BETTER . . . IT'S

BULLDOG

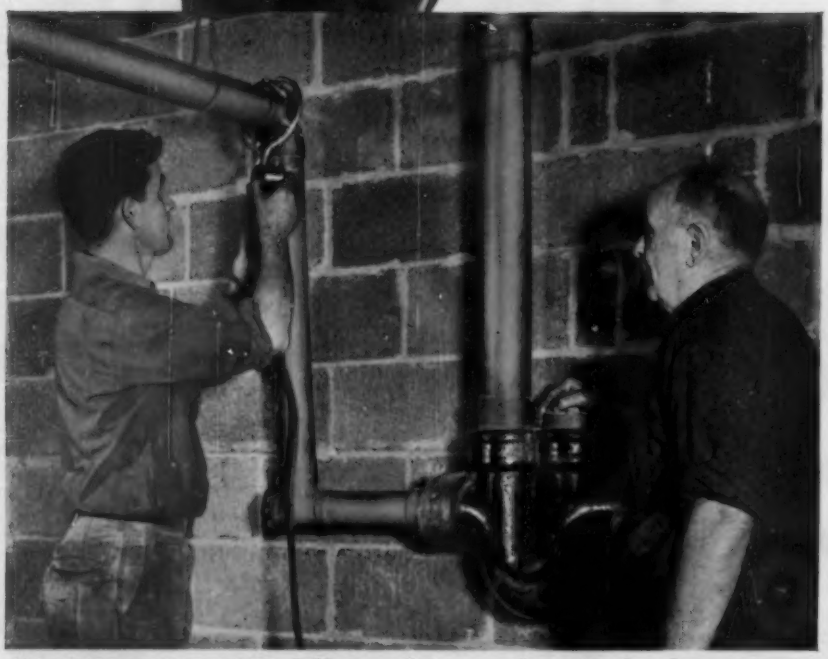
ELECTRIC PRODUCTS COMPANY

A Division of I-T-E Circuit Breaker Company

Export Division: 13 East 40th Street, New York 16, New York. ***In Canada:*** BullDog Electric Products Company (Canada), Ltd., 80 Clayson Road, Toronto 15, Ontario.

Do you realize the savings copper drainage

LIGHTWEIGHT PERMITS PRE-ASSEMBLY. ANACONDA Type M Copper Tubes permit more pre-assembly work at the shop. Even large units can be handled easily. A copper tube and fittings installation weighs about ¼ as much as ferrous materials.



FAST, EASY-TO-MAKE JOINTS. Solder-type fittings save hours. No threading, no pouring and caulking.

EASY TO HANDLE. In 3" diameter, a 20' length of ANACONDA Type M Copper Tube weighs only 54 lb. Lightweight makes them easy to handle, assemble and hang. Contractors can rough in faster with copper tube and soldered fittings than with heavy pipe and threaded or caulked connections.

LONG LENGTHS ELIMINATE MANY JOINTS. ANACONDA Type M Copper Tubes come in standard 20' lengths. This saves contractors' time and fittings when long runs are required.

systems can provide?

If you have never specified a drainage system in copper, we suggest you try it soon, if code permits. Then ask the contractor to compare time and costs.

Shop fabrication of stack, waste and vent sections . . . ease of making solder connections . . . use of standard 20′-lengths for long runs . . . elimination of wide plumbing walls or "build-outs"—all add up to savings.

Many builders know what many plumbing contractors have proved: that soil, waste and vent lines of ANACONDA Copper Tubes and Fittings can cost *less*. Here are just 3 examples. (Names and addresses furnished on request.)

- **CASE A.** Plumbing Contractor "A" bid an "all-copper" job for a housing development—water and drainage lines. His bid was 10% lower than other bids based on copper for water pipe only.

- **CASE B.** Contractor "B" was awarded a job on a small-size house. Before he started, the owner changed the specification to copper. When the job was completed, he figured he had saved $19.01 over a comparable installation of ferrous pipe.

- **CASE C.** Contractor "C's" figures show that on his first copper drainage system he cut installation time ⅓, compared with similar size jobs using heavy wrought or cast piping.

In addition to installation savings, the use of nationally known ANACONDA Copper Tubes and Fittings adds to the salability of new homes. Home buyers know and respect copper's quality and freedom from maintenance.

Send for your free copy of "Copper Tube Drainage Systems." This booklet gives all the information you need on tubes, fittings and their installation. Fill in and mail coupon below. 5412A

Advantages of copper tubes and cast bronze solder type drainage fittings for soil, waste and vent lines

- **big savings in installation time and costs**
- **economies effected by pre-assembly work done in the shop or on the jobsite**
- **carpentry savings**
- **mark of quality construction**

ANACONDA®
COPPER TUBES
Available through plumbing wholesalers

SAVES CARPENTRY AND SPACE. A 3" copper tube stack with fittings fits inside a 4" partition. Trim copper tube and compact fittings give greater freedom of placement . . . reduce cutting of studs and joists. No need to plan for wide plumbing walls or build-outs.

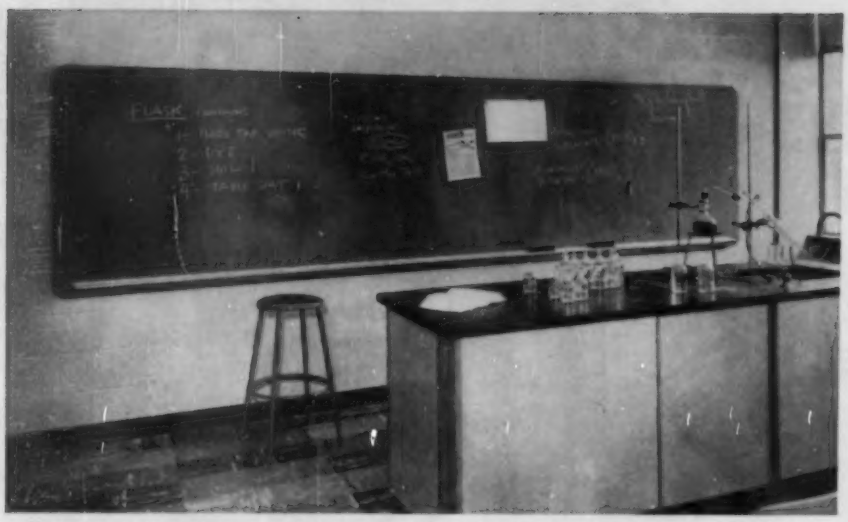
FREE BOOKLET!

The American Brass Company,
Waterbury 20, Conn.

(In Canada: Anaconda American Brass Ltd., New Toronto, Ont.)

Please send me free booklet, "Copper Tube Drainage Systems," which shows how to cut costs with copper.

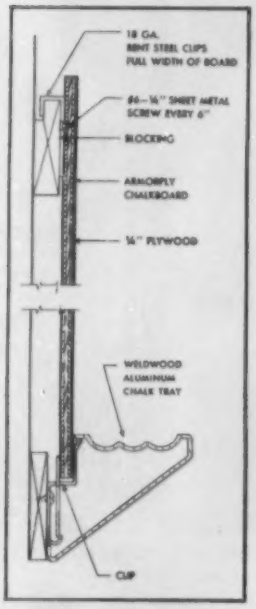
NAME _____
(PLEASE PRINT)
COMPANY _____
STREET _____
CITY _____ ZONE _____ STATE _____



Magnets pin articles, student papers to frameless Armorply Chalkboard in science room of Fairlawn Junior High School, Fairlawn, N. J. Architect: Arthur Rigolo

Frameless Armorply Chalkboard saves up to 30% in installation costs

It doubles as visual aid board . . . needs no maintenance . . . and it's guaranteed for life.



Armorply Chalkboard can be mounted to plastered or unplastered wall without expensive fixed grounds or other surface preparation.

Here's a way to slice chalkboard costs and achieve a clean, modern look at the same time. Specify Armorply Chalkboard—drawing shows cost-saving details. Best of all, you get a *superior* chalkboard—and here's why.

ITS SPECIAL SURFACE of porcelain-on-steel† opens up exciting new fields for visual aid devices. For example, special magnets can be used to show science classes exactly how chemical and physical reactions take place step-by-step.

NO REFINISHING—EVER. Armorply Chalkboard won't shatter, break, buckle or warp under impact, stress, temperature changes or concussion.

UNIQUE LIFETIME GUARANTEE. Armorply Chalkboard is *guaranteed for the life of the building in which it is installed!*

EYE-EASY green color gives maximum readability. And Armorply Chalkboard's reflectance factor is ideal: a report of the Illuminating Engineering Society and the AIA recommends a factor of between 15-20%. Tests by Electrical Testing Laboratories, Inc., show Armorply's reflectance is 18.5%.

ARMORPLY CHALKBOARD has many industrial applications, too. Specify it for shipping rooms, training departments, airline and bus passenger terminals, conference and board rooms, engineering departments—wherever the finest Chalkboard is wanted.

SEND COUPON FOR FREE SAMPLE.

*TRADE MARK

Armorply Chalkboard*

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UNITED STATES PLYWOOD CORPORATION

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United States Plywood Corporation
55 W. 44th St., New York 36, N.Y.

FREE SAMPLE: Please send me a sample of Armorply Chalkboard and descriptive brochure. PA-2-55

Name.....

Company.....

Address.....

City.....State.....

p/a products

(Continued from page 156)

gations and sheet sizes at cost slightly higher than standard polyester-resin sheet. Resolite Corp., Zelienople, Pa.

Plexiglas "R": cast acrylic sheet is commercially available in prices 10% to 25% less than standard sheets, depending on thickness and size. General-purpose sheet has same physical and chemical properties as standard acrylic material and is expected to be particularly useful for industrial glazing, skylights, and lighting fixtures. Rohm & Haas Co., Philadelphia, Pa.

Lamicor: structural material claimed to be stronger than steel and lighter than aluminum is now available in large-size sheets up to 51" x 105", in any desired thickness. Glass-fiber reinforced polyester-resin laminate has great impact strength and high resistance to acids, petroleum products, and moisture. Manufactured in wide range of colors; density ranges from 50% translucent to completely opaque. Strick Plastics Co., 31-06 38 Ave., Long Island City 1, N. Y.

Porcenells: new line of inorganic silicate coatings for fusing to ferrous metals at temperatures as low as 900 to 1200 F. Corrosion-resistant vitreous coating which is durable and can be applied at low-firing temperatures will be especially applicable for thin-gage metals where metal warpage has previously been troublesome. Allied Porcenell Inc., 851 S. Market St., Waukegan, Ill.

doors and windows

Thermopane Gable Window: insulating-glass window is shaped to conform with gabled end of hipped-roof buildings. Five-sided unit eliminates need for sash members or mullions. Units are made for any window opening provided no angle is less than 45° nor any edge less than 8". Libby-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio.

Weathervane Jalousie Window: specially-designed electronic device automatically closes louvered windows with first drop of rain and opens them when rain has stopped. Grid, measuring 2" x 3", is connected to electrical circuit. Moisture on grid closes circuit; when moisture has dried circuit is opened. Micro-Moisture Controls, Inc., 22 Jericho Tpk., Mineola, L. I., N. Y.

electrical equipment, lighting

High-Frequency Power Generator: low-cost frequency changer converts standard 60-cycle power to 400 cycles for improved operation of fluorescent lamps. High frequency eliminates flicker and stroboscopic effect from lamps and gives increased brilliance. Inexpensive capacitators may be used with high-frequency generator instead

(Continued on page 164)

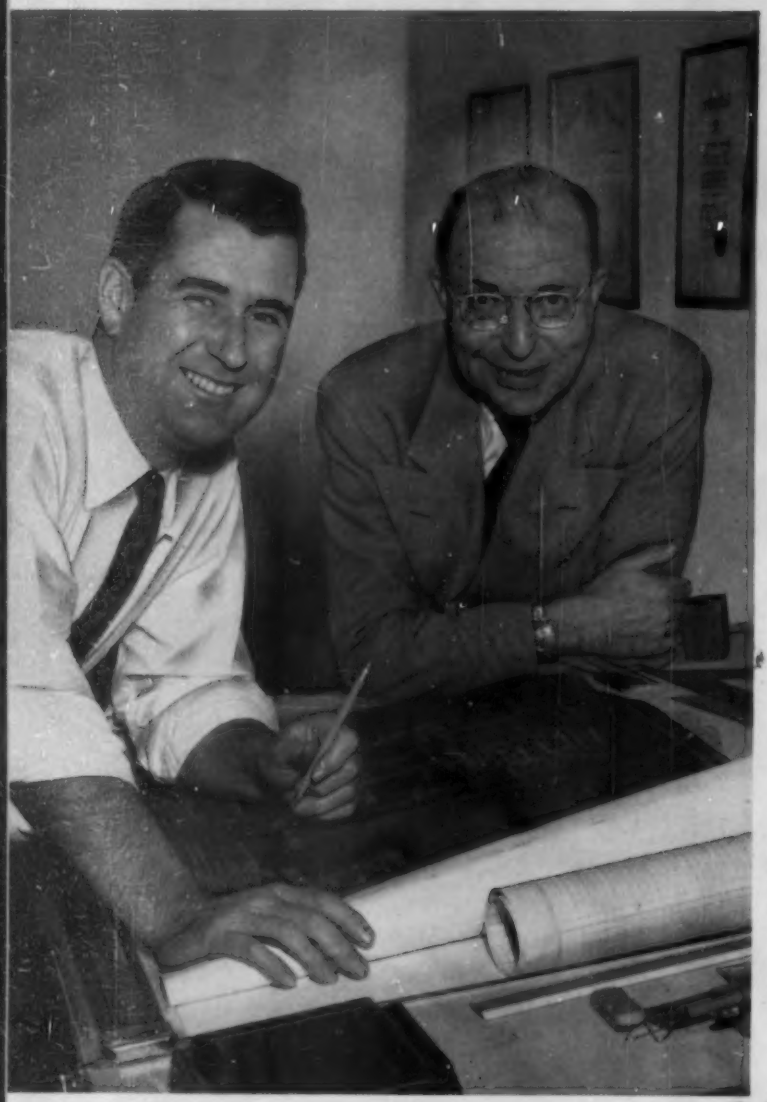
Who stands behind your doors?

IF they're Mengel Doors, your worries are over. Every Mengel Door is built to meet or exceed the most rigid specifications — is *guaranteed* in accordance with the Warranty of the National Woodwork Manufacturers Association — is backed by Mengel's long years of experience and "know-how" in the manufacture of doors. *Mengel is the world's largest manufacturer of hardwood products* — including Mengel Permanized Furniture and Mengel Kitchen Cabinets.

These fine, *guaranteed* doors are available in three different types, for *every* kind of job — "Palace or Project". Each is an outstanding value, and is competitively priced. Write for complete information — AIA File No. 19-E-1.

Door Department
THE MENGEL COMPANY
Louisville 1, Kentucky

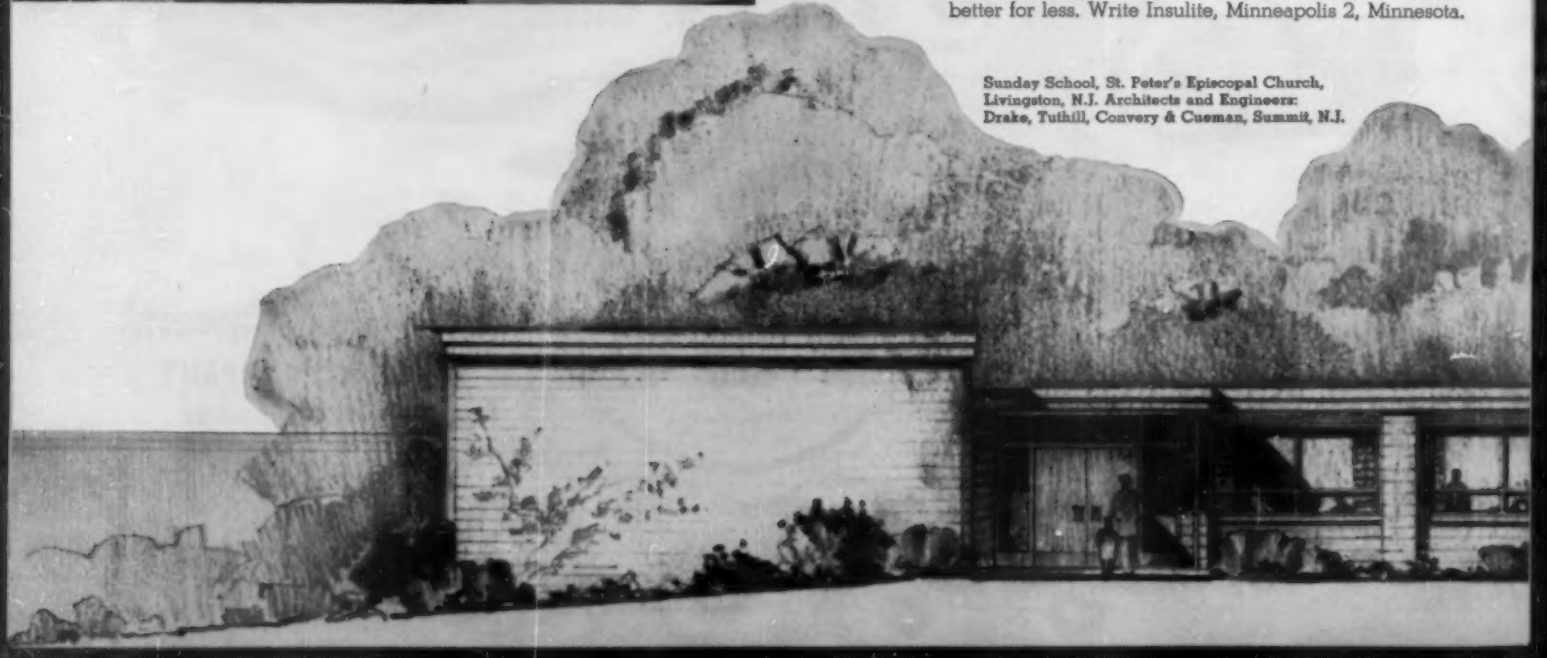
New 3 in 1 Roof Sunday School costs



1. It's roof deck . . . Two by eight foot unit cuts application time as much as 45%. Only one material to handle. New Insulite Roof Deck eliminates need for separate roof boards, insulation, lath and plaster and ceiling finishing. Roof Deck can save 12 man-hours per 1,000 sq. ft. of surface compared with 2"x6" D&M roof sheathing.

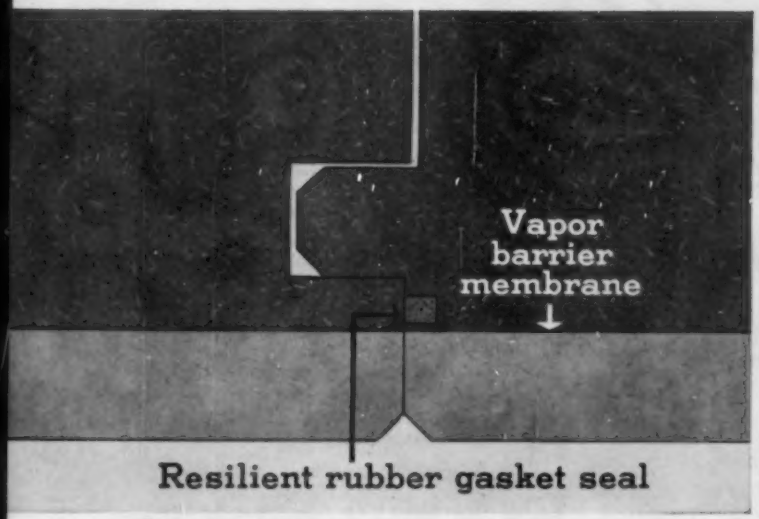
They kept costs under $10 per sq. ft. Paul W. Drake, A.I.A. and C. Harvey Convery, A.I.A. of Drake, Tuthill, Convery & Cueman, Summit, N.J. took advantage of Insulite Roof Deck's money-saving features to help keep costs under $10 per sq. ft. on their new Sunday School shown here. How this new 3-in-1 product—roof deck, roof insulation and finished ceiling—can save $80 to $300 per M. sq. ft. on exposed-beam ceiling jobs is shown in the following pictures.

Send for complete information now. Actual on-the-job pictures and construction details show how to use new Insulite Roof Deck to build better for less. Write Insulite, Minneapolis 2, Minnesota.



Sunday School, St. Peter's Episcopal Church, Livingston, N.J. Architects and Engineers: Drake, Tuthill, Convery & Cueman, Summit, N.J.

Deck helps keep under $10 per sq. ft.



2. It's insulation with vapor barrier... No need for other insulation. Two-inch Roof Deck is comparable to 2" wood deck plus 1" fiberboard insulation and meets heat loss requirements for roof and ceiling construction. Absorbs sound better than wood or plaster—makes rooms quieter. Exclusive vapor barrier combination protects against condensation within the unit in any climate.

3. And finished ceiling. The underside of Insulite Roof Deck is finished with a white flame-resistant surface at the factory. Simply lay Roof Deck over pre-finished beams and the ceiling is done. No need to plaster, paint, stain or wax. Reduces labor and material costs. Insulite Roof Deck is available in 2'x8' units, 1½", 2" or 3" thick with or without Insulite's exclusive vapor barrier.

INSULITE DIVISION
Minnesota and Ontario Paper Company
Minneapolis 2, Minnesota

Build better for less with

INSULITE

Made of hardy Northern wood

The ARCHITECT knows that ALGRIP

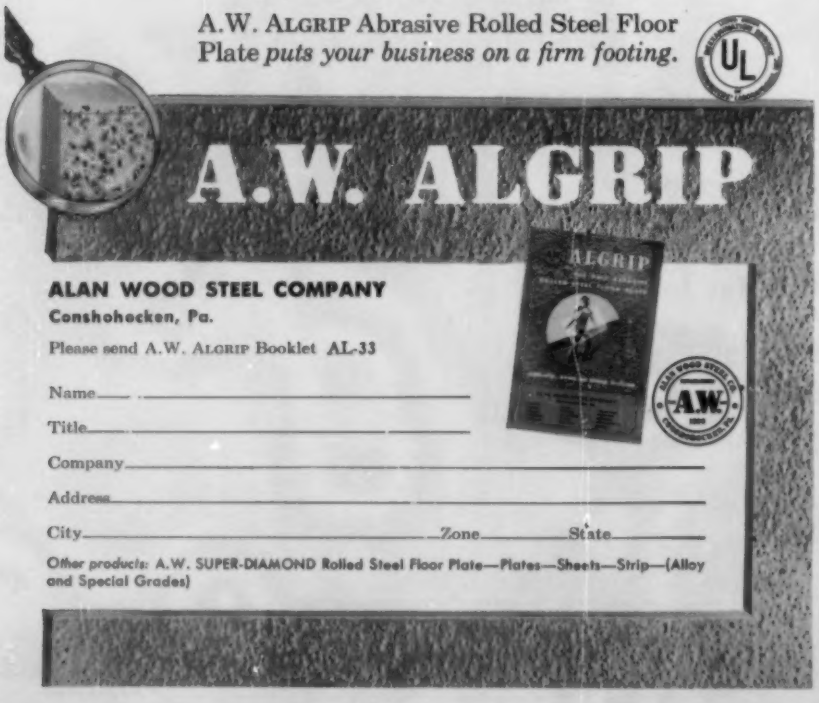
—the *only* abrasive rolled steel floor plate in the world—means permanent safety against slipping accidents in any industrial plant . . . even on wet, greasy or oil-splashed floors or ramps.

He also knows . . .

—that ALGRIP's depth-controlled abrasive penetration of its rolled steel base . . . assuring a safety surface self-renewed against the hardest wear . . . means greater . . . constant . . . and lasting . . . safety of your workers' lives.

—that ALGRIP is approved for safety by the Underwriters' Laboratories.

A.W. ALGRIP Abrasive Rolled Steel Floor Plate *puts your business on a firm footing.*



ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Please send A.W. ALGRIP Booklet AL-33

Name_____

Title_____

Company_____

Address_____

City_____ Zone_____ State_____

Other products: A.W. SUPER-DIAMOND Rolled Steel Floor Plate—Plates—Sheets—Strip—(Alloy and Special Grades)

p/a products

(Continued from page 160)

of ballasts. Bogue Electric Mfg. Co., Paterson, N. J.

Guth Gratelite Troffers: recessed troffers designed for large-area lighting and for use with grid ceilings may be installed as individual units or in groups. Troffers 2′ wide are available in 2′, 4′, or 8′ lengths; lamps are shielded from direct view by louvered diffusers. The Edwin F. Guth Co., 2615 Washington Ave., St. Louis 3, Mo.

Mercury-Vapor Lamp: medium-wattage mercury-vapor lamp is especially suited for commercial or industrial applications requiring installation at heights under 20′. Color-corrected 250-watt lamp offers advantages of longer life and greater output over regular lamps. Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N. Y.

finishers, protectors

PlastiSpray Vinyl Coating: sprayed-on vinyl film protects outdoor surfaces from water penetration, bridging cracks and holes up to 24″ wide. Elastic coating resists abrasion, acids, and fungi; material is self-extinguishing and reduces penetration of radioactive radiation. May be applied in thicknesses ranging from 5 mils to ⅛″. Progressive Industries, Inc., 48-08 Van Dam St., Long Island City 1, N. Y.

Stabilized Paint: chemically stabilized ingredients in wood coating are claimed to heal surface ruptures in paint, preventing weather from penetrating surfaces. Test panels covered with one coat are still in good condition after several years of exposure. Manufactured in transparent clear, translucent clear, and redwood stain. Beneficial Chemical Products, Inc., 4340 York Blvd., Los Angeles 41, Calif.

sanitation, plumbing, water supply

Hotstream Dual-Temp Heater: automatic hot-water heater provides high- and low-temperature hot water simultaneously. One outlet supplies water at 180 F; temperature selector regulates amount of cold water added to mixer at second outlet. Available in 30, 40, or 60 gallons, tank is lined with aggregate stone for protection against corrosion. The Hotstream Heater Co., 2362 E. 69 St., Cleveland 4, Ohio.

surfacing materials

Kentile Corktone: newly designed floor tiles offer warmth of cork shades with advantages of resilient, asphalt flooring. Nonskid tiles are resistant to fire, alkalies, and dirt. Available in four shades of random-patterned cork: light, light medium, medium, and dark. Kentile, Inc., 58 Second Ave., Brooklyn N. Y.

When you Specify...

ADVANCE BALLASTS

.....ADVANCE

.....BALLASTS

are

.....CERTIFIED

Designed & Engineered
BY THE
WORLD'S LARGEST MANUFACTURER
DEVOTED *Exclusively* TO THE PRODUCTION OF
FLUORESCENT LAMP BALLASTS

ADVANCE TRANSFORMER CO.

Cable Address "ADTRANS"
2950 N. WESTERN AVENUE, CHICAGO 18, ILLINOIS, U.S.A.

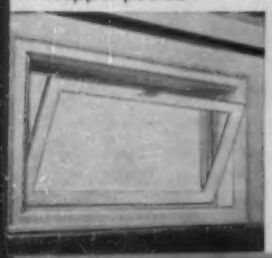
New Jersey school building for which architect specified 388 Flexivents Unit No. 218.

Versatile Andersen prove ideal for school

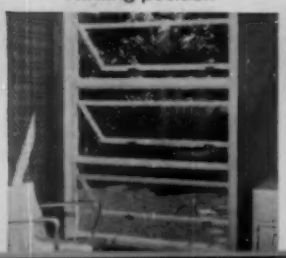
Combination of bright, airy classrooms contained in a building of pleasing design has been achieved through effective use of Flexivents in Holy Rosary School at Erskine Lakes, New Jersey. Flexivents were specified by Architect, Brother Cajetan J. B. Baumann, O.F.M., A.I.A. Builder David Stokem finds Flexivent's "price is right, installation is simple and there are no window failures." In Holy Rosary School the architect has used large, 32-sash groupings of Flexivents with bottom and third row vented hopper style, alternate rows fixed glazing. Dimensions of the Flexivent No. 218 used here adapt perfectly to the architectural style of the building. Utilization of both operating and fixed sash provide for the fresh air and sunshine so desirable in school rooms. WINDOWALLS sold by established millwork dealers throughout the United States including the West Coast.

FLEXIBLE IS THE WORD FOR *FLEXIVENT*

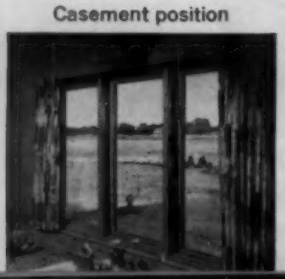
Hopper position



Awning position

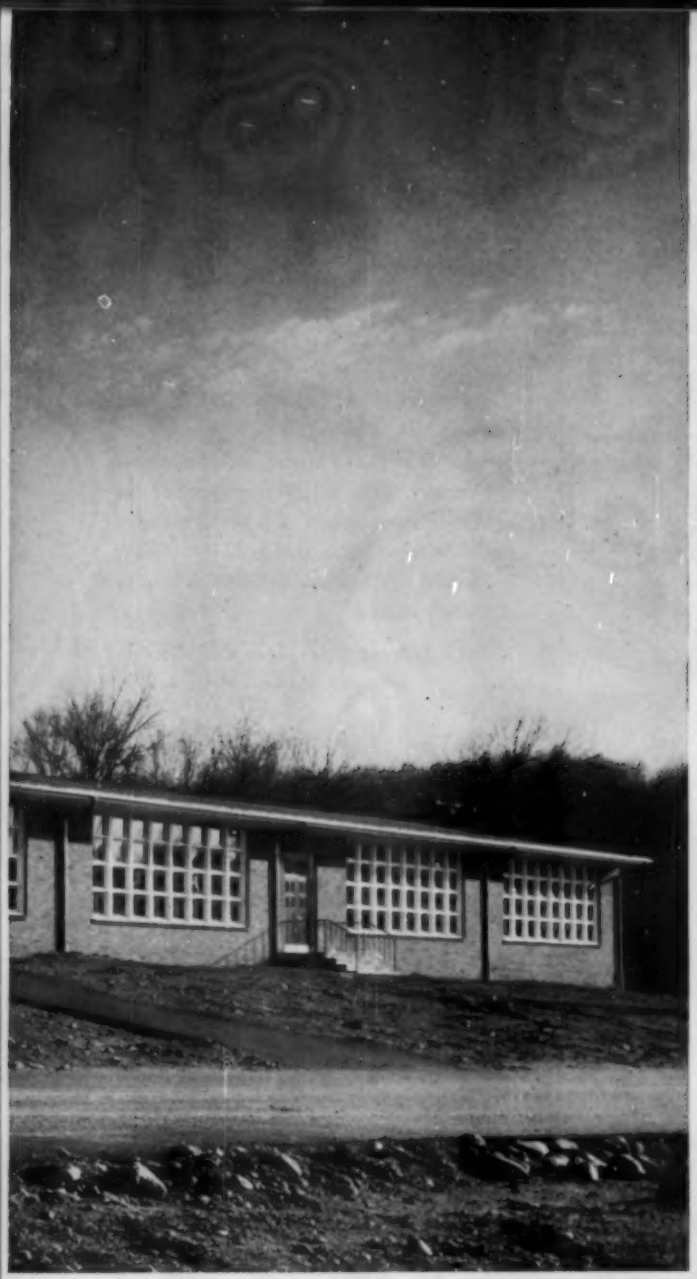


Casement position



New optional Roto Lock Underscreen Operator...

Optional Andersen Double Insulating Glass...

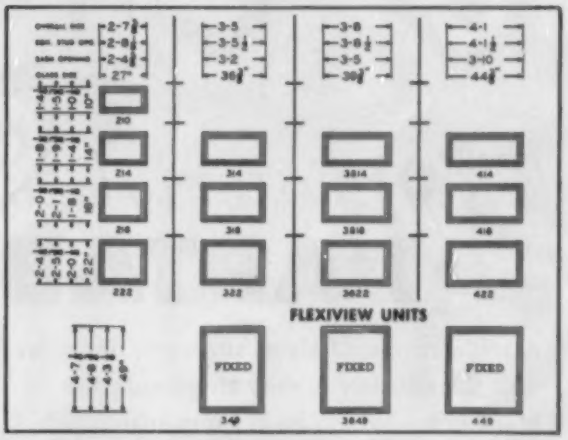


FLEXIVENT units construction

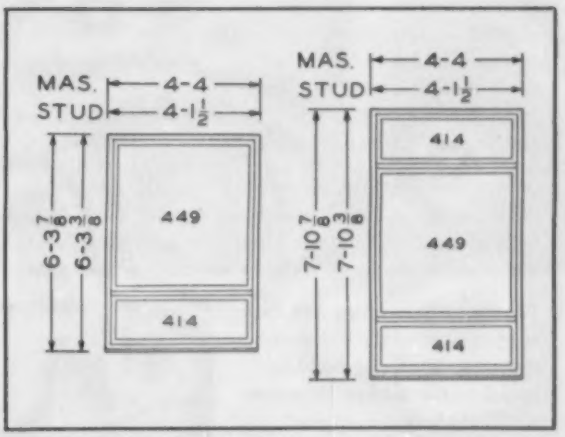
New **FLEXIVIEW** picture units... new 3′8″ width make *FLEXIVENT* more versatile than ever!

Even greater design possibilities now stem from the versatile Flexivent. New Flexiview Units, picture window partners to the Flexivent, can be combined with either fixed or operating Flexivent Units to form WINDOWALLS of remarkably low over-all cost per square foot.

Addition of the new 3′8″ width to the Flexivent line, including the Flexiview Picture Units, makes the Flexivent perfectly adaptable to 4′ modular panel systems of construction.



New table of sizes shows complete new Flexivent line. Flexiview Picture Units are glazed either DS with quality window glass or with Andersen Double Insulating Glass.



Suggested combinations particularly adaptable to schools, indicate the wide range of picture window possibilities available with addition of new Flexiview Picture Units to the Flexivent line.

Andersen *Windowalls*

COMPLETE **WOOD** WINDOW UNITS

TRADEMARK OF ANDERSEN CORPORATION

Andersen Corporation

BAYPORT, MINNESOTA

Andersen Corporation
Bayport, Minnesota PA-25

Please send me detail information on Andersen Flexivent Windows including new Flexiview Picture Units.

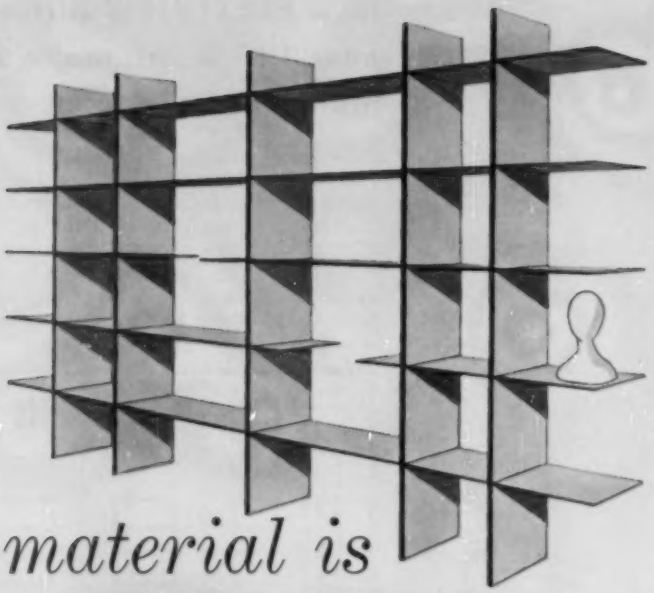
Please check { ☐ also send Detail Catalog ☐ also send Tracing Detail File

Name.....

Firm.....

Address.....

City.....*Zone*....*State*.....



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ADAPTABLE

A wide range of sizes, surfaces, densities and thicknesses makes Homasote the ideal material for both temporary and permanent construction of many types

In the egg-crate construction pictured above, sheets of Homasote are cut half-way through and interlocked. Even without nails, this room-divider has great structural strength... The illustration at the right indicates that this material has SIZE; its Big Sheets—up to 8′ x 14′—abolish many former size limitations... The wall paneling in the illustration below is of Striated Homasote, cut and positioned as tiles. (Wood-textured Panels are also available.)

In $^{15}/_{32}$″ and $^{21}/_{32}$″ thicknesses, this material is available in the 8′ x 14′ Big Sheets. It also comes in 2′ x 8′ sizes, $^{21}/_{32}$″ or $^{15}/_{16}$″ thick, V-grooved and giving the effect of beveled planks. The Striated and Wood-textured Panels are 8′ long, 16″, 32″ and 48″ wide. In all forms, it can be supplied in special sizes and shapes — to your order.

We urge you to take a new look at Homasote — the oldest and strongest insulating-building board on the market. Homasote is still made in the original 8′ x 14′ sheets—$^{15}/_{32}$″ thick. But today, Homasote is also made in six other thicknesses—with the densities and sizes necessary to meet every requirement from underlayment to finished flooring, interior and exterior walls, partitions and ceilings, sheathing and roof decking.

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HOMASOTE COMPANY

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out of school

by Carl Feiss

"The concept of the public welfare is broad and inclusive. The values it represents are spiritual as well as physical, esthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled."

Supreme Court of the United States,
Berman v. *Parker*—October, 1954

To Justice Douglas and the other Justices of the Supreme Court who unanimously supported him in this superb opinion, this column extends its personal (but, alas, hypothetical) gold medal award. No more epoch-making decision directly affecting city building and rebuilding has been made since the 1925 *Euclid-Amber Realty* case, which validated the concept of zoning. To those who conceive of the United States as only crass and materialistic, this wise and civilized judgment should serve as refutation, at least in part, of so common a belief. May the architects, city builders, and planners of this country live up to the confidence here placed in them! May they have the strength and courage to remind their clients that there is now a legal and ethical mandate to rebuild, in areas cleared of slums, so that the result may be "beautiful as well as sanitary."* To our students and our teachers, may this serve as an inducement to study and learn how to build better cities and to develop their philosophies and skills for so public a purpose. Civic esthetics as a concept within the *good society* has now come of legal age.

I am also pleased to mention here, before reporting on my latest trip to Theleme, that things are picking up with the Committee on Education of the AIA, over at the Octagon. Under Jim Hunter's dynamic chairmanship, they had two lively and productive days of meeting, back in December. This year's Commit-

(Continued on page 172)

*From same decision.

M. D. Anderson Hospital, Houston, Texas / MacKie & Kamrath, architects.—no. 49 lounge chair / no. 103 tripod table / no. 116 cabinet / no. 306 table / no. 95 chair in foreground / "Tracy" handprint on window.

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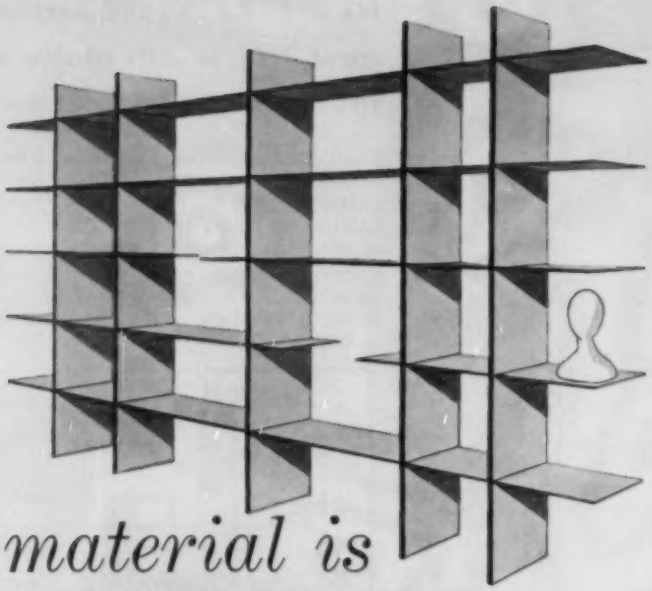

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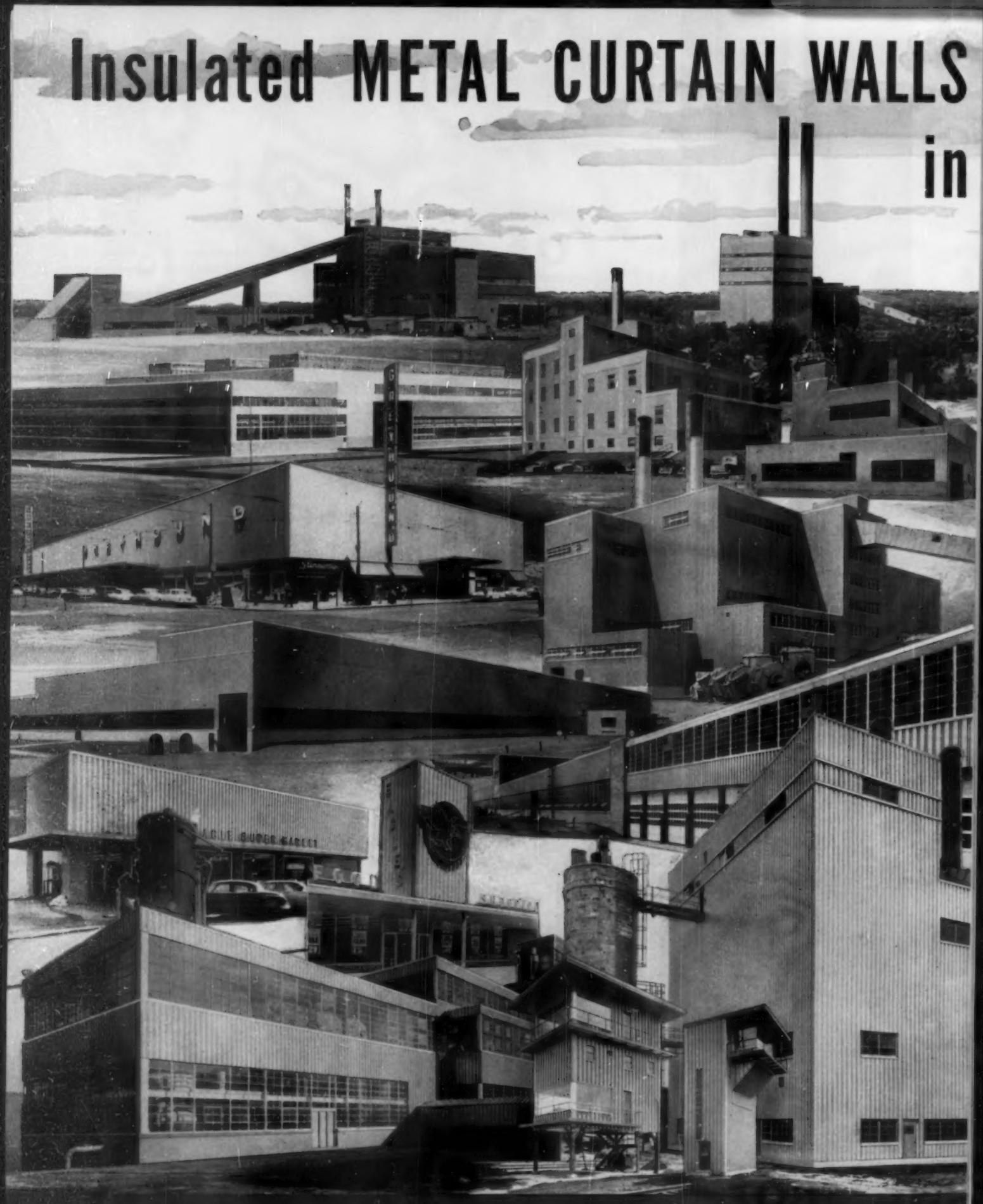

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out of school

(Continued from page 168)

tee shows real promise, though it is perhaps slightly overweighted with schoolmen (God bless them!). They are sincerely trying to pull the Committee into a position where its work and recommendations can help to provide the background to policy decisions and action programs of the Institute, a position it has never been able to achieve in the past. It is to be hoped that, in time, the Directors of the Institute will ask the Committee chairmen to meet with them on all matters directly of concern to the individual committees and on such matters as the committees may have reported. I understand that Hunter recently was given an opportunity to express his committee's views, in person to members of the Board, which is a step ahead indeed and an indication that by degrees a proper relationship is building up between the Board-appointed technical advisory groups and the Board itself.

Last year the Committee on Education obtained an agreement that the Presidents of the NCARB, ACSA, and NAAB, be automatically invited each year to serve as members of the Committee. A year ago last month was held the first Four Power Conference of these important education groups. I am happy to report that they met again right after the Committee on Education sessions in December, and then met as a group with the Executive Committee of the AIA Board of Directors, to discuss mutual policy problems. It has taken a long time for so obvious a procedure to develop and much credit goes to Ned Purves and Walter Taylor for its final consummation. Let us hope that the lines of vertical communication between the Committee and the Board are now permanently open. If they are, I am sure that we will see results in specific terms at an early date.

serious design conflict threatens peace at Theleme

It has been some time since I have visited the School of Architecture at the University of Theleme, as several of this column's readers have noted. I always hesitate to pay a visit to Theleme unless in-

(Continued on page 176)

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An outstanding example of the "Kawneer Touch" . . . the new all-welded aluminum door can be "customized" to your needs. Now you can specify a door that is 10% stronger than similar doors, provides a clean, seamless, eye-appealing appearance, and features interchangeable hardware . . . yet the cost compares with other standard doors. Here is the only stock door that can be styled to any type of store. Learn all about it now. See your Kawneer dealer or write Kawneer, Niles, Michigan.

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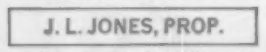

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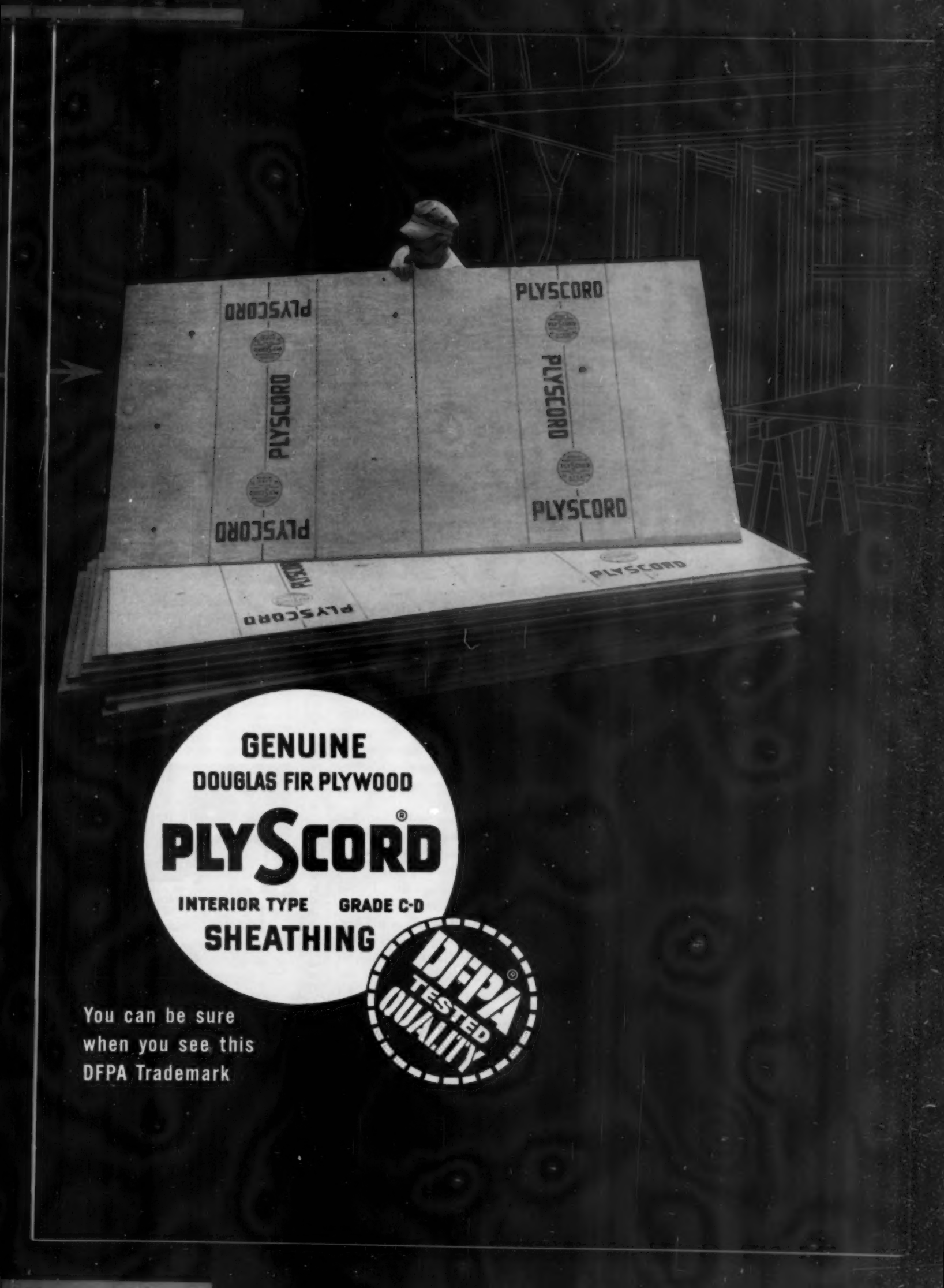

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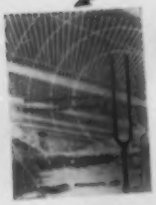

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out of school

(Continued from page 172)

vited, for fear of being taken for a talent scout from another school or a member of an accrediting team from the NAAB. Therefore, I was pleased to receive a telegram from the Dean:

PLEASE COME AT ONCE. SCHISM THREATENS DESIGN PROGRAM. HELP.

I immediately had horrid visions of the Mies boys at one end of the drafting room throwing things at the FLW boys at the other end (or vice versa) with the Gropius boys standing at the doors, waiting for the moment when the carnage was such that they could spring a *coup d'etat* and take over. I know that the Dean is a man of courage, but I wasn't so sure of all the faculty, although, as my readers well know, the heads of the art and building research departments are exceptionally able and dynamic. I supposed, from the tone of the telegram, that the rest of the faculty was cowering under the drafting tables.

For once, the Dean did not meet me at the airport. Instead, I was met by his attractive wife, that ideal helpmate. Her campus reputation as hostess and expert politician had done much to consolidate the Dean's position several years ago, at the time the College of Engineering announced its intention of opening a school of Architectural Engineering. But that is another story.

The Dean's wife was cordial but obviously distrait. I tried drawing her out as she drove me over to the school but she kept repeating with very obvious lack of conviction, "Everything's fine. I know the Dean is eagerly anticipating your visit but, of course, these things will happen. No, there's nothing to worry about! Just a little upset. Hope you'll stay for dinner." Since I despise eating my dinner at the University's "Tuck Shop," I accepted.

The Dean's Secretary, the usual poker-face type who has been around for years and has seen many Deans come and go, looked up at me and beamed. It was a startling experience. "The Dean is expecting you," she cooed, "I'll take you to the faculty meeting at once." There

(Continued on page 177)

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out of school

(Continued from page 176)

was an unwonted stillness in the corridors. There was no sound of horseplay from the Gent's Room. There was no debate on in the classrooms. There was no battle raging in the drafting rooms, after all. The Dean's Secretary knocked respectfully (!) on the door to the Faculty Lounge, opened it, and I stepped in. The air was tense and hostile.

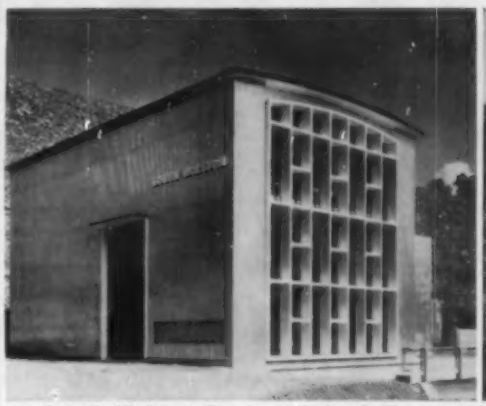
The Dean was at the head of a long table, about which was seated the entire faculty. Piles of drawing were scattered up and down the length of the table. Also scattered about, there were some three-dimensional abstractions of paper, wire, glass, and of a variety of odd materials. Dusty and battered, forlorn, chipped and bedraggled, and completely strange to the Curt Versen lamps, the Knoll drapes, and the Henry Miller furniture, was a large plaster cast of an Ionic Capital. *(The dawn came up like thunder.)*

The Dean smiled as we shook hands. "Mr. Feiss, you have met the faculty before. They had all agreed . . ." he paused as though this was the first thing that they had all agreed upon in some time, "that I should invite you here to advise us on a very knotty situation. As a student of a wide variety of pedogogic problems, and an author on education, a former Director of a School of Architecture, as a former Chairman of the AIA's Committee on Education, we appeal to you to counsel with us today, before we sink in the quagmire of our indecisions." The Dean paused in his melodramatic elocution and my eye followed his around the table of cold faces and set lips.

"We have come," said the Dean's bland voice, and I could not meet his glance, "to a parting of ways in the theory of a teaching system. I should give you a bit of history. You may remember than when I took over the school, a number of years ago, I went down the corridors and into the classrooms and drafting rooms and with an axe smashed the classic casts—columns, capitals, the Discobolus, cymas, all the casts of the Orders, the Roman swags, Greek anthemia, and all the other standard furniture of architectural educa-

(Continued on page 180)

Johnsonville Steam Plant, Johnsonville, Tenn.



South Holston Project, Bristol, Tenn.

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MET ARCHITECTS' REQUIREMENTS FOR 35-FOOT VERTICAL WINDOW TREATMENT WITH NARROW HORIZONTAL LINE RELIEF

Behind the bold, imaginative design and engineering that built the Keokuk, Iowa High School is a story of how Ceco helped solve a knotty lighting problem and achieve the architect's aim.

The Problem: Architects Perkins & Will visualized a design that would relieve the broad reaches of the Iowa countryside with a vertical effect and at the same time achieve a functional approach to better daylighting. Mindful that students need natural daylight, and relief for their eyes by gazing at distant outside scenes, the architects wanted a "wall of windows" that would perform all functions to an optimum degree. Standard window treatment would have left unsightly horizontal lines to mar the design's bold vertical appearance. Since the vertical lines of the windows were accentuated by the mullion treatment, it was believed necessary to minimize horizontal lines by keeping them narrow and of the same size. Here's how Ceco helped solve the problem: To create the illusion of a single 35-foot tall window, three Ceco Standard Steel Architectural Projected Windows were nested one on top of another and welded together by Ceco Construction Crews in the field. Vertical expansion was made possible by clips at the head and sill of each unit. Horizontal expansion was accommodated through the joints at the vertical "T" mullions. Thus, at no extra cost, the effect desired by the architect was achieved . . . a massive expanse of vertical lines, uninterrupted by heavy horizontal sight lines at the windows. The assembly method provided a tighter weatherseal, and a color scheme of windows that was most unique. For areas needing ventilation at inaccessible heights, mechanical operators were installed for easy control from the floor.

The Result: Viewed from a sharp angle, the protruding "T's" give the effect of a wall of steel. As the viewer moves toward right angles to the building, the windows begin to unfold, until, viewed head-on, they have the effect of a wall of 35-foot high windows. The "School of Changing Faces" is another example of architect-contractor-supplier teamwork in action. Next time consult Ceco on your building problem. Consult Sweet's files for Ceco windows and screens. (CECO STEEL)

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Here is another example of how architects achieve bold originality through the use of standard Ceco windows.

1—View of wall of windows in Keokuk High School. Note how the "T" mullions create an illusion of a steel wall in the distant areas of the school face.

2—As you move around this wing of the Keokuk High School, the face of the building begins to change in character as the windows become more evident, the mullions less prominent.

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out of school

(Continued from page 177)

tion with which men of our generation of schooling grew up. I took great sadistic pleasure in so deliberate an iconoclasm. The chips flew wild and we combed plaster dust out of our hair for weeks. It is true that unbeknown to me one Ionic cap was rescued by our sentimental old janitor and has served as his coffee table in his cubby hole in the basement for years. It sits before you now to haunt me."

"We immediately discarded the analytique in the first year. Studies of the Orders were barred enthusiastically and Basic Design was instituted at once. The works of the Bauhausen were combed for ideas. Specialists in the visual arts were brought here. You see some of them before you today. They have worked hard and faithfully, through the years. Gradually a system of training evolved. But let me ask Professor Abner Stracht to lead off. He's in charge of Basic Design."

Professor Stracht, a clean-cut crew-cut man of about 35, looking bellicose, put down his briar pipe and, with an occasional prod from his colleagues, said:

"We have had the best Basic Design course to be found anywhere. Our work begins with the simplest element in design, the point in space; then to points in space as they may relate to each other, then to connections between them and so into line. We spend a month on line, then into planes—interpenetration—biotechnic infiltrations—visual systematizations— repetitive shifts of globular enrichments—psychophysical reactions to sensory logistics . . ." My mind was wandering as Professor Stracht unwound the lovely familiar jargon of Basic Design. ". . . interpenetration of functional space fluctuations — geometrical absolutes of circumscribed variables — kinetic mesh organisms related to tactile harmonies— human equilibrium and the golden transvestism—" and then suddenly the word "Ionic" startled me to alertness.

Professor Stracht was saying, "As we experimented in fourth-dimensional form structures directed toward the establishment of a *nuclear* module based on the

(Continued on page 182)

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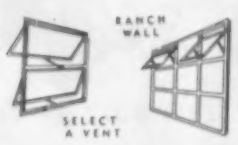

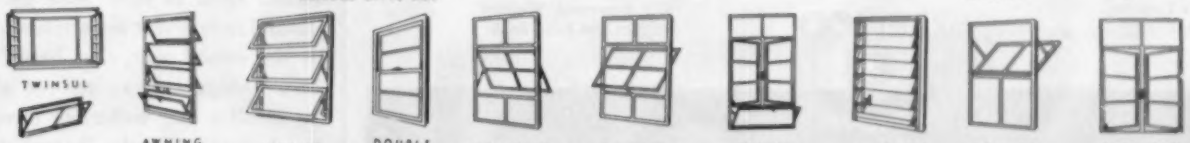

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MEMO

TO: SPEC. Writers

SUBJECT: Interior Fire-Protection

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out of school

(Continued from page 188)

following formula $x\sqrt{a+b-c(4)} = 00$ we discovered in the Ionic volute all elements for which we had been searching. In fact, the Ionic volute in combination with other elements in the cap, the entablature, the shaft, and even the base, coincided to $.00007\sqrt{x-y}$ of our module, which was close enough for the purpose of instruction to first-year students. We therefore felt ourselves fortunate in our find of the cast in the basement. It was excavated at once and the students were assigned the task of drawing it up accurately. We discovered also in the basement of the town library a copy of Vitruvius that had formerly been in the architectural library and fortunately had escaped the book burning. And then all Hell broke loose: the teacher and students in the upper grades of design happened by 'accident' into the Basic Design room. Actually they had had a spy watching us for months." Professor Stracht looked accusingly at the stoney faces across the table.

"Thank you, Professor Stracht," interrupted the Dean hastily. "We will hear Professor Thims, representing the upper grades in design, give his side of the story." He turned to the lean, highly intelligent chairman of the Design Department who was frowning malevolently at the Ionic cap.

"Well," said Professor Thims, pleasantly but with obvious care in the selection of his words. "There really isn't much to tell. We have always left Basic Design alone. It has never interfered with us or we with it—until this *occurrence*. We have the greatest possible respect for Professor Stracht and his staff and as long as he kept clear of the field of architecture there has been no trouble. After all we have our work to do and they, theirs. And what the students have been learning in Basic Design doesn't seem to have been particularly harmful in first-year architectural designs. By the second year, they have forgotten Basic Design anyway and we all enjoy the mobiles and well-made three-dimensional abstractions they hang in the exhibition room."

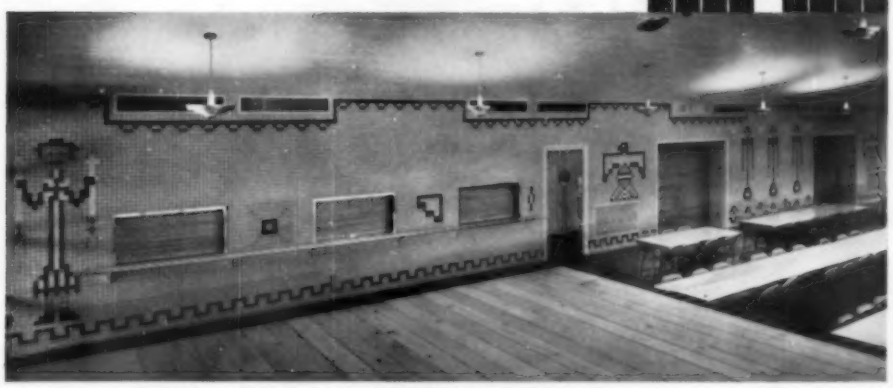
(Continued on page 190)

mural in *Suntile* ceramics

BRIGHTENS SCHOOL CAFETERIA, SAVES MAINTENANCE

In this new Arizona high school cafeteria a mural in Suntile Ceramics, 100 ft. long by 10 ft. high, combines fresh decorative interest and a durable, easily maintained surface.

Conceived by architect Edward S. Varney, and developed by the school's art students, the mural is based on colorful Navajo Indian motifs whose geometric forms could be readily reproduced in 2″ x 2″ unglazed, Satinized Suntile Ceramics. Colors are grey, black, white, turquoise, rose, yellow, jade green and red.



Mesa High School, Mesa, Arizona • Edward S. Varney, architect

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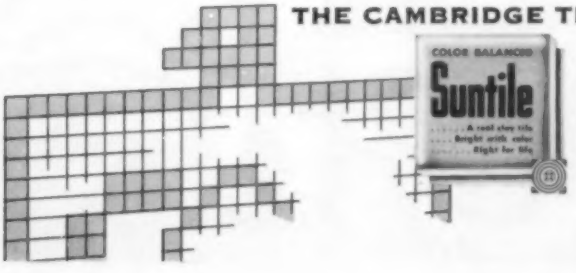

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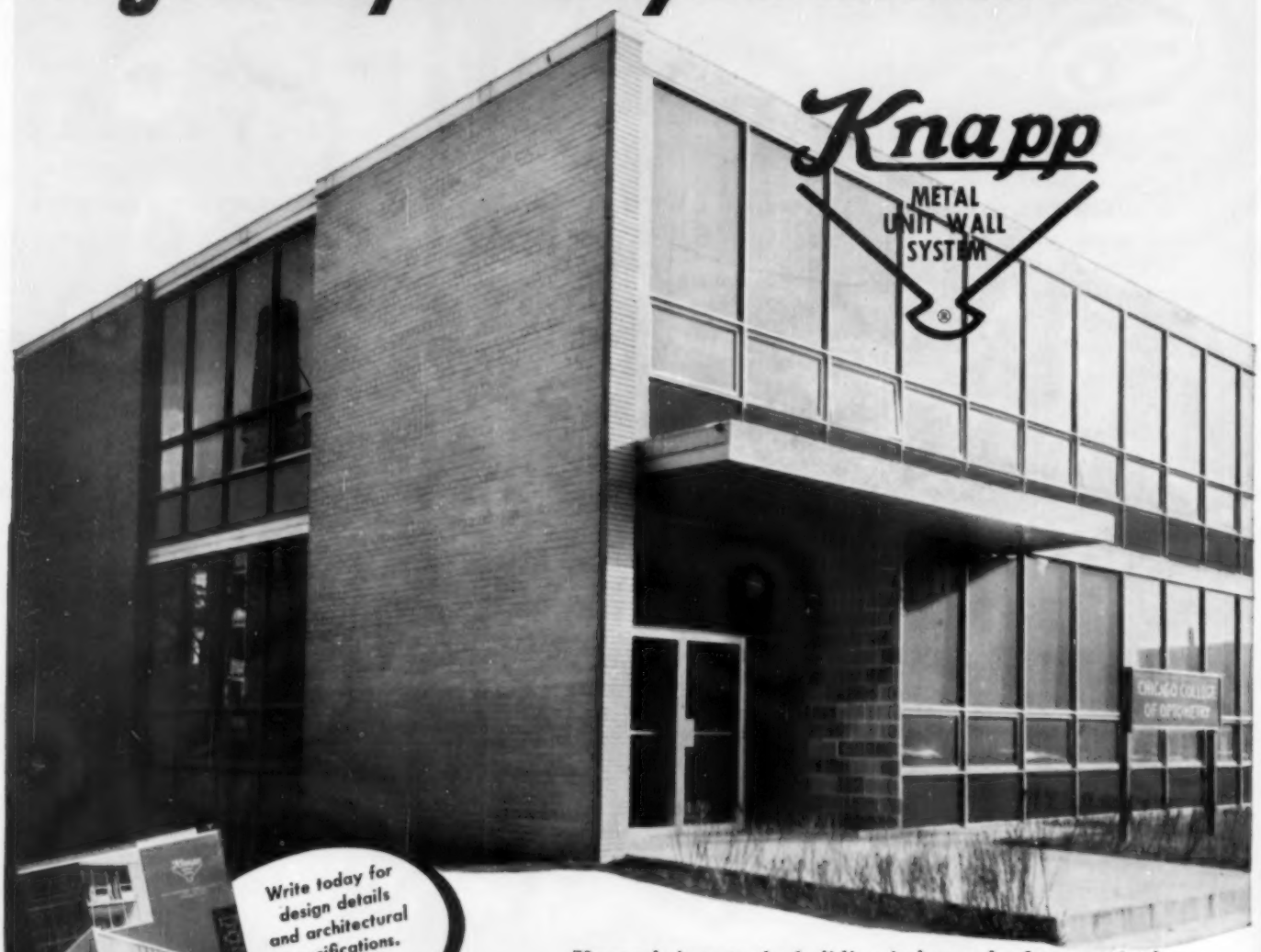

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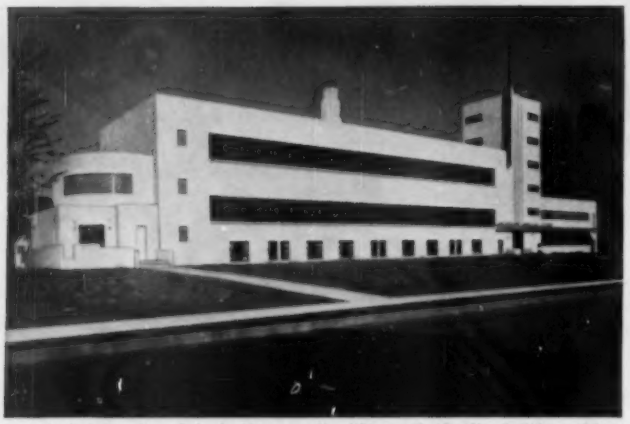
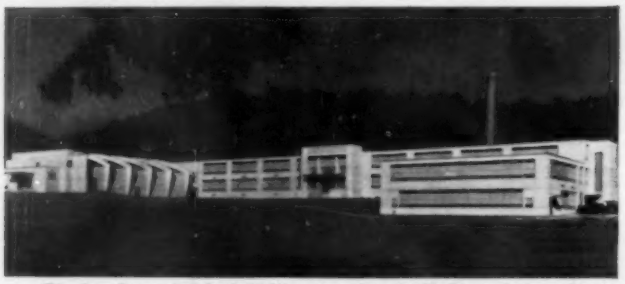


Archbishop Dowling School, Minneapolis, Minn.; J. V. Vanderbilt, architect

Lower Columbia Junior College, Longview, Wash.; Wolff & Phillips, architects

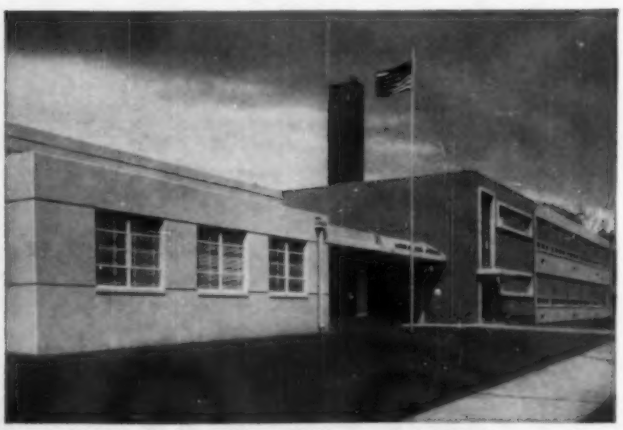
Frayser High School, Frayser, Tenn.; Anker F. Hansen, architect



Theodore Roosevelt School, Williamsport, Pa.; D. H. Grootenboer, architect

South Downs Elementary School, Baton Rouge, La.; Bodman & Murrell, architects

Southern High School, Okolona, Ky.; Hartstern, Louis & Henry, architects



Murray Hill School, Chanute, Kans.; Williamson, Loebsack & Assocs., architects

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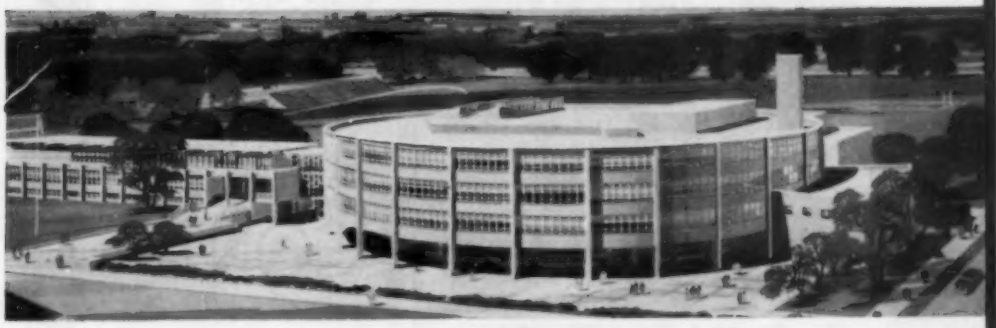

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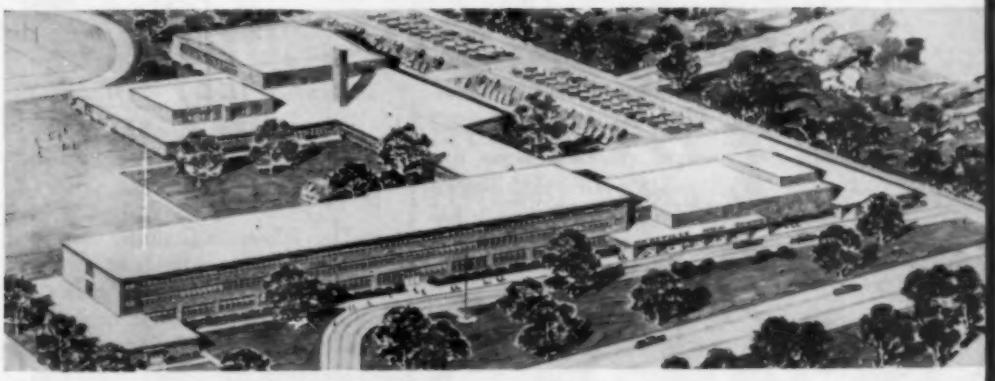

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ARCHITECTS. Knappe & Johnson, New York

GENERAL CONTRACTOR: Castagna & Son, Inc., Rockville Centre, N.Y.

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out of school

(Continued from page 188)

"We have always considered that possibly Basic Design served in some capacity as an intellectual stimulus, although we have never had time to find out what it was all about. But when they began studying the Ionic Order they stepped over the boundaries of pure form into architectural ornament and, frankly, this couldn't be tolerated. In the first place, with the competition for students and faculty these days, and what with accrediting and scholarships and everything, we couldn't afford to lose face with the Ivy League. I suppose . . .," and Professor Thims laughed dryly, "that we should call it the Acanthus League, now. What would they think about us at IIT, at Harvard, MIT, Yale, California, or Pennsylvania? No, the situation is serious. Then a further difficulty faces us. What if the students memorized the Orders and began putting them into their designs? Imagine, if you can, the piloti under the Lever Building by S.O.M., crowned with Ionic caps; or rows of anthemia along the edges of Saarinen's General Motors Labs." Professor Thims paused while his side of the table shook its mass head. "If all Basic Design depends on the Ionic Volute, then I say we turn back to the analytique. I'll resign and the school can train men exclusively for practice in Washington, D. C., where the classic orders still flourish. For God's sake—doesn't somebody still believe that Form Follows Function?" With this irrelevant outburst he collapsed, in tears.

A young man at the far end of the table raised his hand and hesitatingly said to the Dean, "Sir, as you know, I represent the student body in this controversy. In the debates of the last few weeks, I have listened carefully to both sides. I can't judge the pros and cons of your very complicated arguments. I have learned in school all about space, form, and color, line, texture, and structure. I know how to distinguish between a photo of a Mies building and a photo of a Gropius building. I know whose work looks like whose, and I can design like any of them to please a jury, if I know who the jurors are before-hand. I graduate this

(Continued on page 192)

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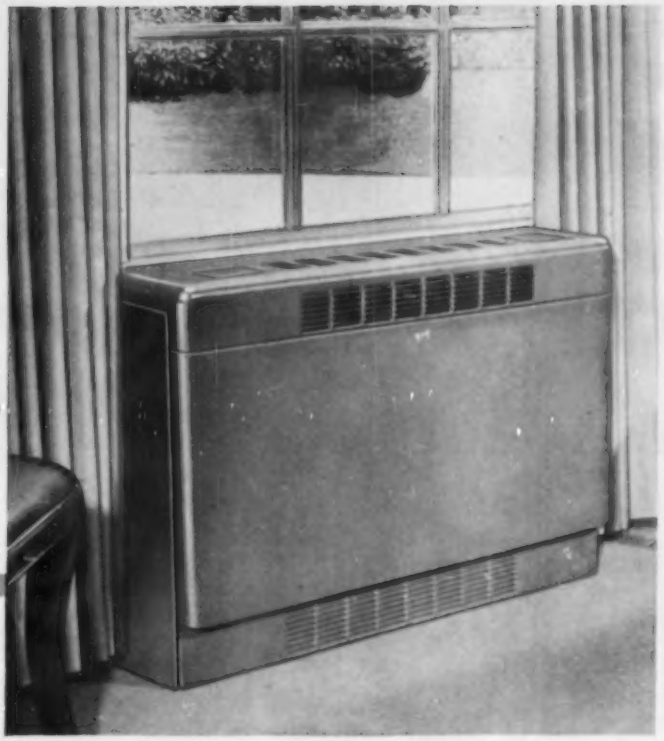

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"Roomaire" Conditioners can be installed either free-standing or partially recessed.

"Roomaire" Conditioners provide four season air conditioning in one compact, individually controlled unit. They cool, dehumidify, heat, ventilate, filter and circulate, operating with hot water in winter and chilled water in summer . . . using *the same piping.*

"Roomaire" units are ideal for installation in hotels, hospitals, motels, schools, apartments, homes and public buildings where individual room conditioning is desirable. Only 9¼" in depth, the "Roomaire" Conditioner requires a minimum amount of floor space, and it can be partially recessed if desired.

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"Roomaire" Conditioners are available in three sizes, 200, 400 and 600 cfm with nominal cooling capacities of ½, 1 and 1½ tons to meet every room conditioning requirement. For complete details on "Roomaire" Conditioners see your nearest Young Representative listed in the yellow pages of your telephone directory or fill in the coupon and mail it to the Young Radiator Company, Racine, Wisconsin.

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out of school

(Continued from page 190)

year and my grades have been good, and I studied hard for five long years. But, Sir, how does a tree grow? Why do I need shelter? Where should sunlight come into a room and how do you keep the wind and rain out? Why do I like to look at the sky and the grass and how do I move around about my own business and with other people, happily in the buildings I build? May I ask one more question. Please, sir, how big is a man?"

I rose and turned to my friend the Dean, "Please tell your lovely lady that my plans have changed and I will not be able to stay for dinner. I am sure that you understand that there is nothing for me to do here."

The Dean's eye twinkled—or was it a wink? "I am sorry," he said, "that you had to make the trip for nothing. But you see we still have a lot to learn." You all know the Dean of Architecture at Theleme as well as I do. What puzzles me the most is why he had let matters get out of hand. I suppose he is like a lot of us who occasionally mistake license for Democracy.

letters to the schoolmaster

Dear Carl: I have read your comments for September 1954 P/A with great interest. There is perfect evidence that you read correctly my own thought between the lines and your worry over the how and when is shared by myself.

I particularly enjoyed your discerning note on the section, "Education and the Modern Movement." It will be interesting to see whether it provokes any real rebuttal.

TURPIN BANNISTER
University of Illinois
Urbana, Ill.

•

Dear Carl: Thank you for your review of the architectural survey. My only comments are that it is a very excellent review and at the moment I can say nothing worth publishing. I appreciate especially your kind reference to me.

EDWIN S. BURDELL, President
Cooper Union
New York, N.Y.

p/a reviews

two appraisals of reference

The A.I.A. Standard Contract Forms and the Law. *William Stanley Parker and Faneuil Adams. Little, Brown & Co. 60 E. 42 St., New York, N.Y., 1954. 147 pp., $7.50*

Inside and outside the building industry, decided changes in thinking on the responsibilities, obligations, rights, privileges, and hazards of the parties to a building design and construction project have been developing for some time past; as construction materials, equipment, techniques have grown in size, complexity, and value, the legal aspects of design and construction have similarly grown. A movement toward greater clarity, exactitude, and also fairness to contractors in construction documents has been evident. For such reasons this study of standard AIA documents in relation to the law has timeliness, interest, and value.

William Stanley Parker is appropriately one of the authors; he has been closely identified with the AIA standard documents since their 1915 edition; has been active in editing, revising, bettering such documents; to him, more than to anyone else, credit is due for their present form and merit. Public, formal, recognition of his distinguished services in this field has been made on several occasions. Faneuil Adams, the co-author, is a lawyer with experience in architectural and construction cases.

In the normal course of undertaking the construction of a building, the owner will contract for the Services of two professionals; the architect to design, the contractor to build. Detailed discussions of the AIA Standard form of documents for these services make up about half of this book. The balance is made up of a reprinting of the other AIA standard documents; some discussion of arbitration, bonds, insurance; and a historical review of the development of the standard documents to their present form.

The standard contract forms between Owner and Architect on percentage fee and fee-plus-cost basis are discussed; and

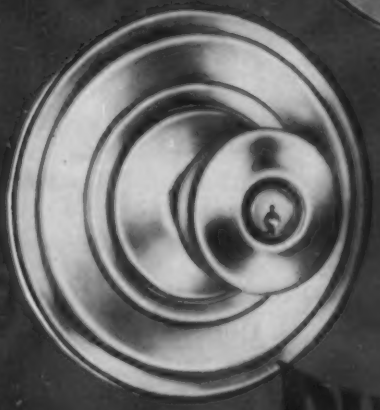
(Continued on page 196)

Décor that helps to achieve Distinction

RUSSWIN "Stilemaker" Ornamental Escutcheons

Brunswick design

Mono design



Cosmic design

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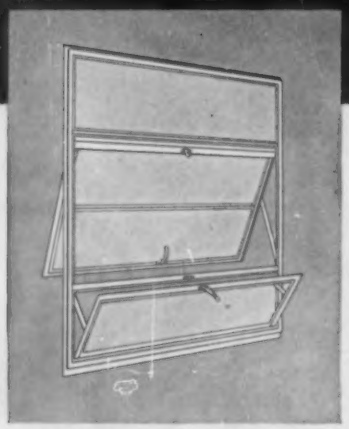

New Providence Hospital, Washington, D. C.

Architects:
Faulkner, Kingsbury & Stenhouse, Washington

General Contractors:
Charles H. Tompkins Co., Washington

Window Erection Contractors:
F. H. Sparks Co. of MD., Inc., Baltimore

Architectural Aluminum Fabricators:
A. F. Jorss Iron Works, Arlington, Va.

AMONG THE MANY ALUMINUM APPLICATIONS IN THIS BUILDING:
Reynolds Aluminum Intermediate Projected Windows (illustrated above; details on facing page).

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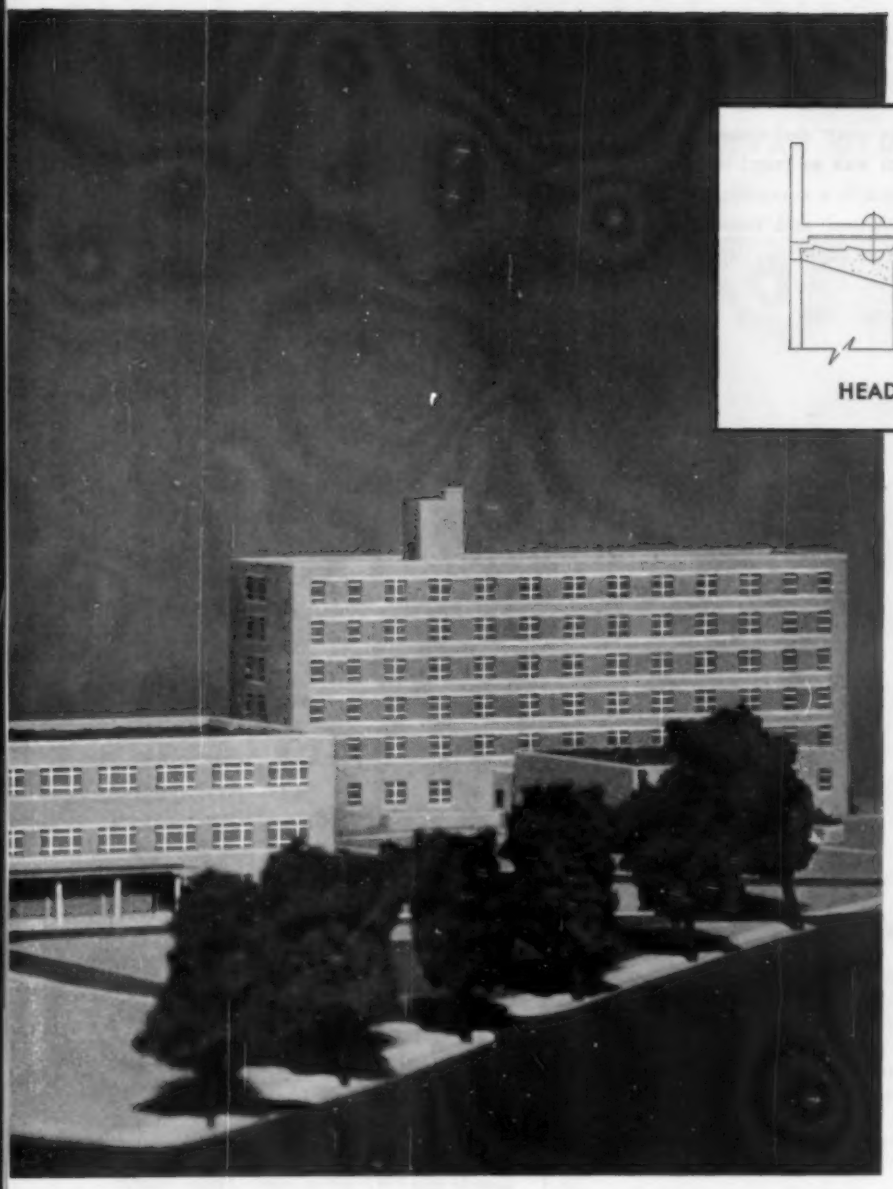

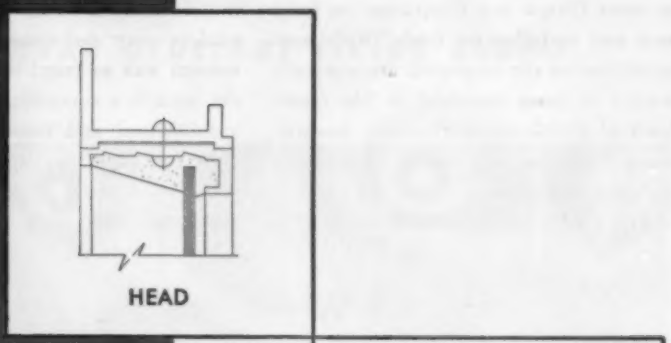

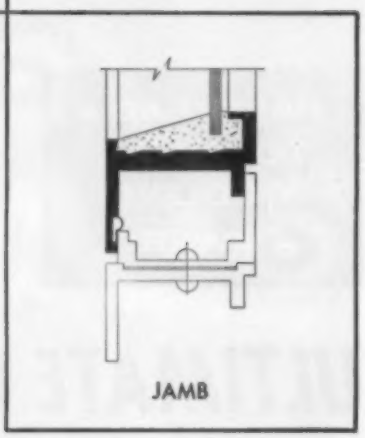

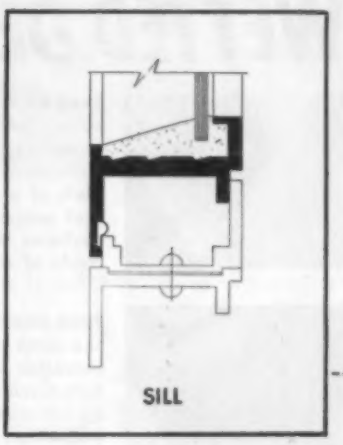

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ALUMINUM

(Continued from page 193)

between Owner and Contractor on lump sum and cost-plus fee basis. With some amplification the comments are generally similar to those contained in *The Handbook of Architectural Practice;* however, many additional references to legal cases are helpfully given.

The comments are strictly confined to the documents under discussion; some readers may be disappointed that the content was so restricted; but, in effect, the work is a complete survey of general architectural and construction law. To some the book may appear slightly out of balance: many of the documents are reprinted with little or no comment; down through the years these documents probably have occasioned little controversy, little discussion.

The work is of great value to owners, architects, contractors, lawyers, and to others interested in legal phases of construction. Each standard provision of the AIA forms singled out for detailed treatment, is rather completely discussed and interpreted in the light of practical experience, legal complications, and results of court action defining their proper construction. The treatment is clear, interesting, easy to read. The text is uninterrupted; the references are considerately segregated in footnotes. The thoughtful placing of the individual standard paragraph or paragraphs under discussion immediately preceding the discussion fosters ease of reference and understanding.

Reading this book will not alone qualify one to be one's own lawyer; the authors point out: "Interpreting court decisions is often confusing as appeals frequently develop counter decisions. In a recent case a first appeal reversed the original decision, while a further appeal brought another reversal that supported the original decision. It is clear that if the various courts can disagree it is not strange that Owners and their Contractors or their Architects should differ at times as to the meaning of their written agreements."

Sound advice toward avoiding legal complications is often given, as for instance—the recommendation is made that after the first conference, the architect should send a leter to the client "confirming his understanding of their meeting of minds as to the service he was to render and enclosing a form of agreement in accordance therewith. The Client, having received this confirmation and having permitted the Architect to proceed accordingly without any notice to the Architect to the contrary, is as firmly bound by the stated terms as if he had signed the agreement." In another connection: "brief written confirmation to a client of understandings reached during the progress of the work . . . will bind the Owner as firmly as a statement signed by him, if, having received them, he permits the Architect to proceed as outlined, thus giving tacit approval."

Helpful legal information is offered throughout; such subjects as the Lien

(Continued on page 202)

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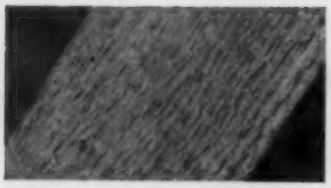

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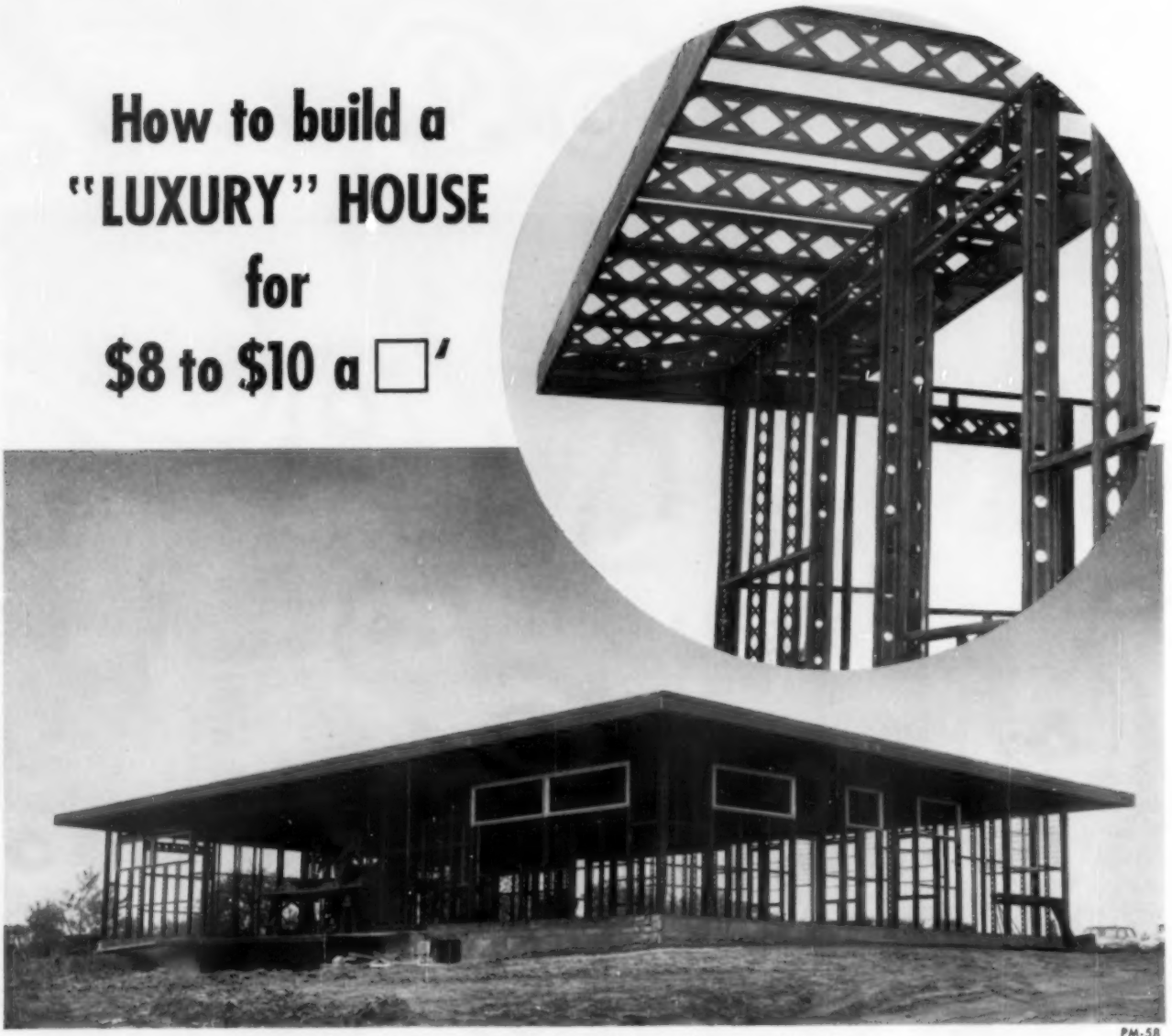

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PM-58

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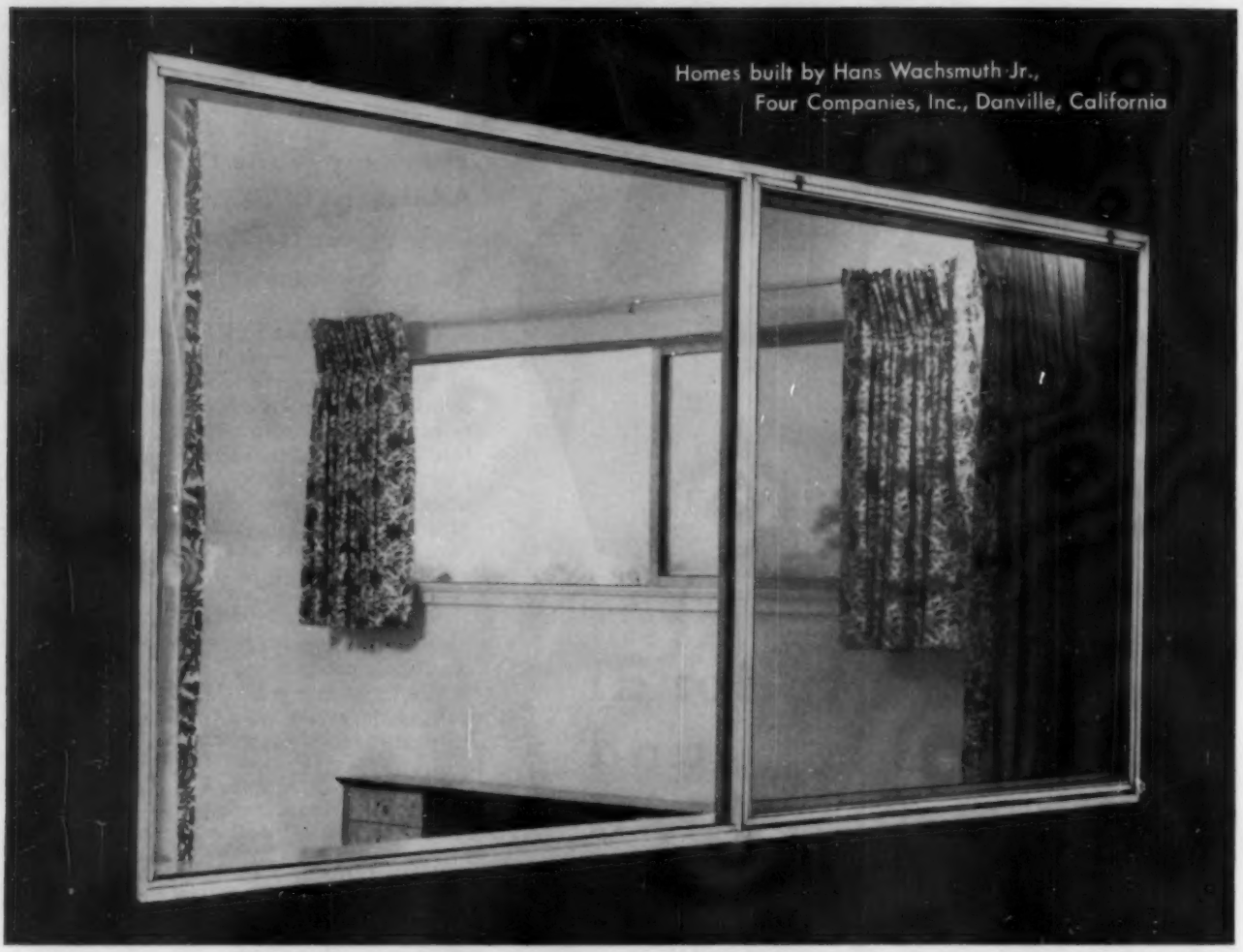

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reviews

(Continued from page 196)

Laws, guarantee of costs, architect's status in case of abandonment of work, etc., are treated. Knowledge of his rights and responsibilities is important to the architect; his risks range from the possibility of not being paid for his work under certain circumstances, up to possible liability for certain property damage and bodily injuries. Possibilities and hazards in connection with improper signatures of owners, correlation of plans and specifications, responsibility for checking of shop drawings, etc., are related.

The closing review of the course of development from 1915 onward, of the text of the standard documents convincingly shows how successful and constant has been the effort to keep the text up to date and abreast of current need, practices, and requirements. The same spirit and effort are evident in this book.

LAWRENCE E. MAWN

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I find no fault with the authors but rather with the agreements and the General Conditions themselves, which are not defined in a few well-chosen words but, in many instances, are vague and complex. It is time that the Institute commissioned a group of men experienced in the drafting of legal documents in the building industry, to evaluate these documents as they exist and bring them up to date.

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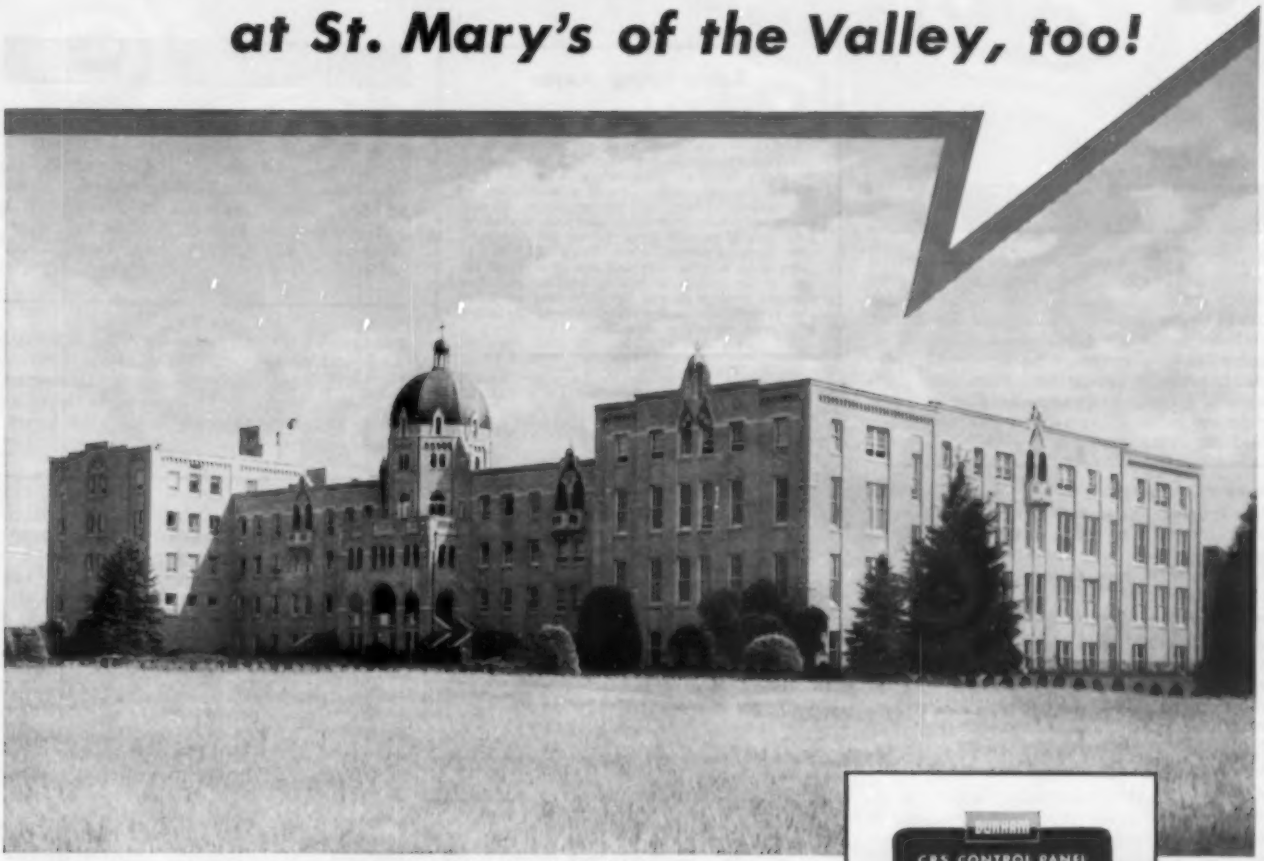

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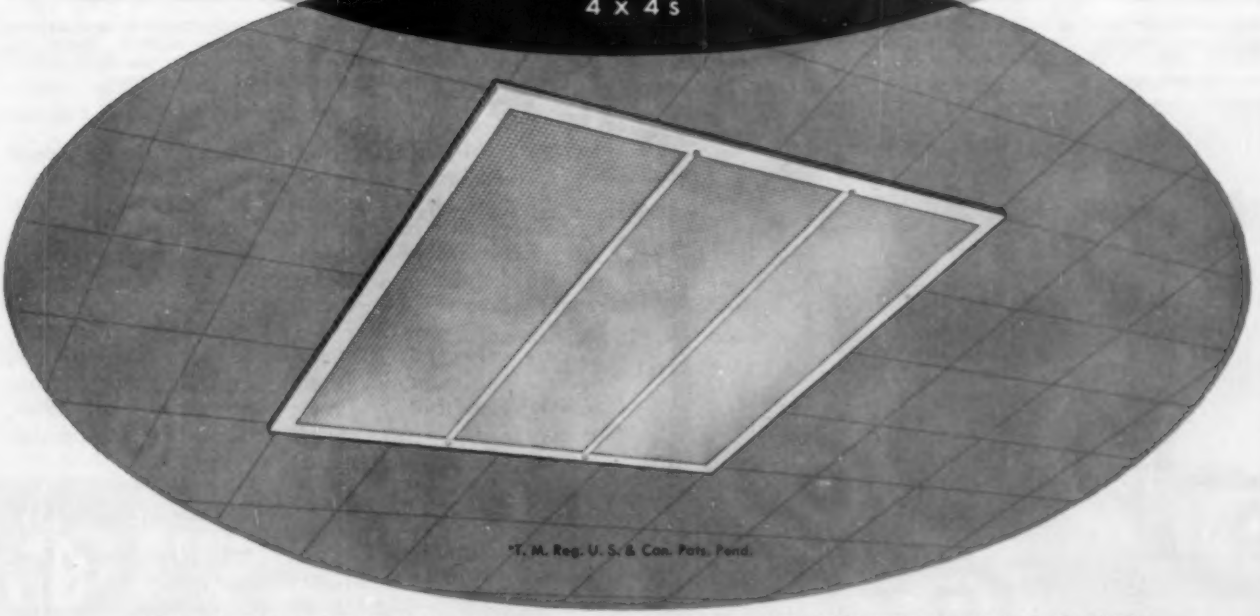

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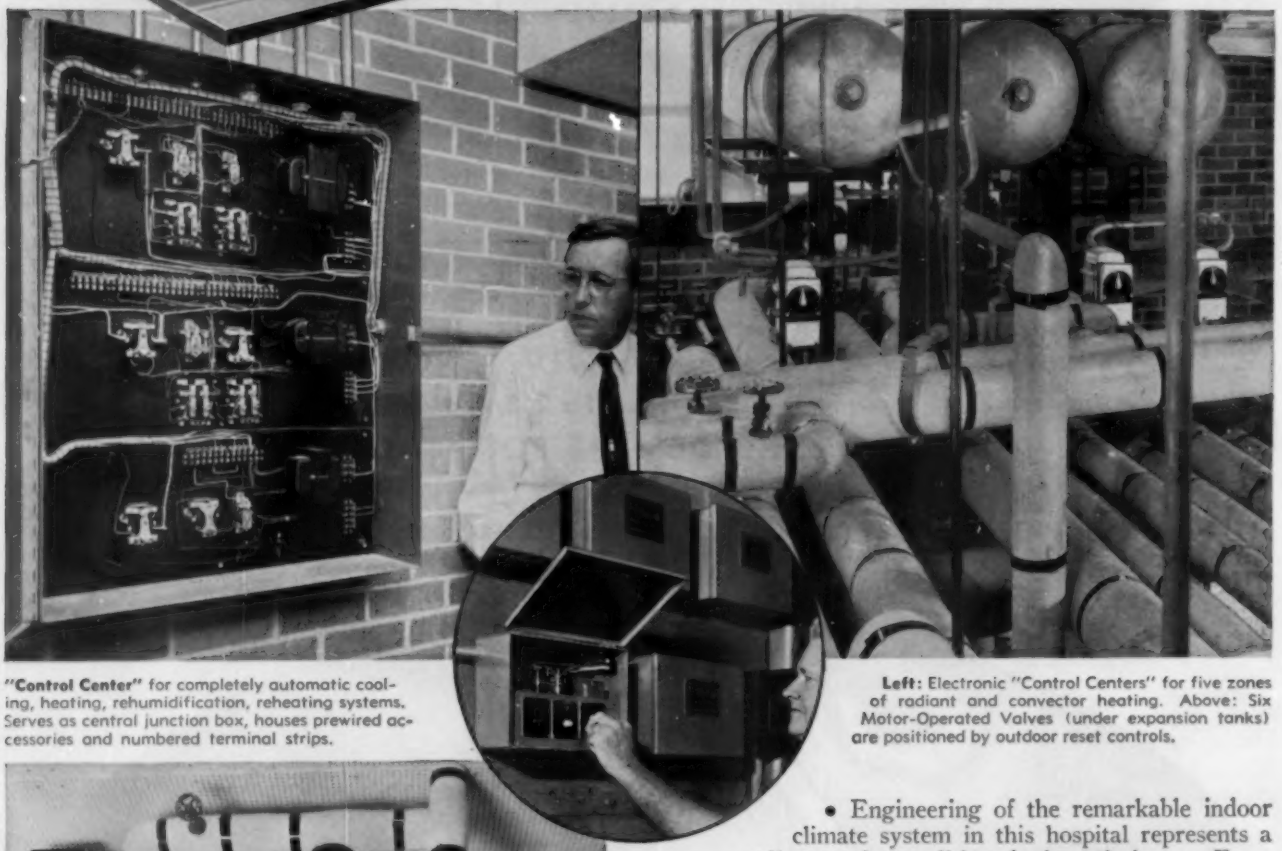
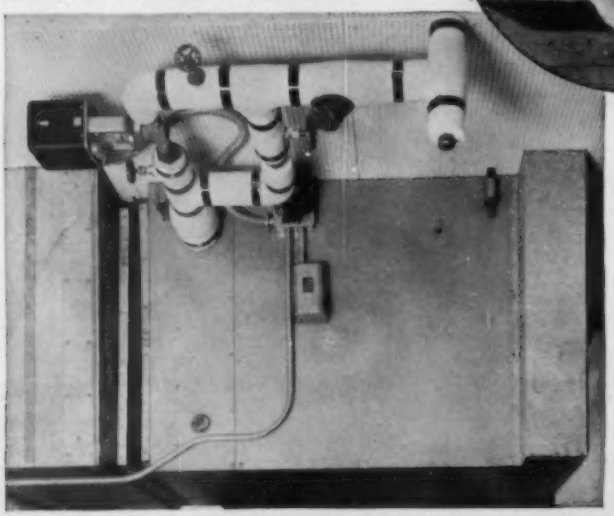
Primary objectives . . . simplicity, sensitivity, sustained accuracy, and low cost . . . were achieved in the advanced control system at Crippled Children's Hospital in New Orleans. Combining electric and electronic controls . . . using modern "Control Center" installation methods . . . in a low, rambling building where power lines are available everywhere . . . exacting temperature and humidity conditions are maintained in areas with widely differing requirements. As much as 50% was saved on installing labor. Maintenance is at a minimum, due to simplicity of the systems and their components. It's another example where *"better* control . . . electrically" pays off!

Architects-Engineers: RICCIUTI, STOFFLE & ASSOCIATES. *Associate-in-Charge:* J. BUCHANAN BLITCH. *Structural Engineer-in-Charge:* LOUIS J. ROSENBOHM, JR. *Mechanical Engineer-in-Charge:* ED. W. PENEGUY. *Consulting Electrical Engineer:* LOUIS N. GOODMAN & ASSOCIATES. *Mechanical Contractor:* CABIRAC MECHANICAL CONTRACTORS, INC. *Electrical Contractor:* WEISFELD & SON. *Sheet Metal Contractor:* BLATTMAN SHEET METAL WORKS (Uni-Flo Air Distribution Equipment used throughout hospital).



"Control Center" for completely automatic cooling, heating, rehumidification, reheating systems. Serves as central junction box, houses prewired accessories and numbered terminal strips.

Left: Electronic "Control Centers" for five zones of radiant and convector heating. Above: Six Motor-Operated Valves (under expansion tanks) are positioned by outdoor reset controls.



Damper Motor (under duct) and Motor-Operated Valve (near ceiling) control damper and hot water supply for blower-type unit heater in kitchen area.

• Engineering of the remarkable indoor climate system in this hospital represents a milestone in conditioned air techniques. From heat treatment rooms to therapeutic pool facilities, from the gymnasium to the nurses' wing, practically every room had different temperature and humidity requirements. Even though every modern control feature was employed to solve these problems, the simplified automatic electric and electronic systems cost less to buy, operate, and maintain. You, too, can offer *"better* control . . . electrically!" Phone your nearby Field Office, or write us for data, prices, and expert engineering assistance on any automatic control problem.

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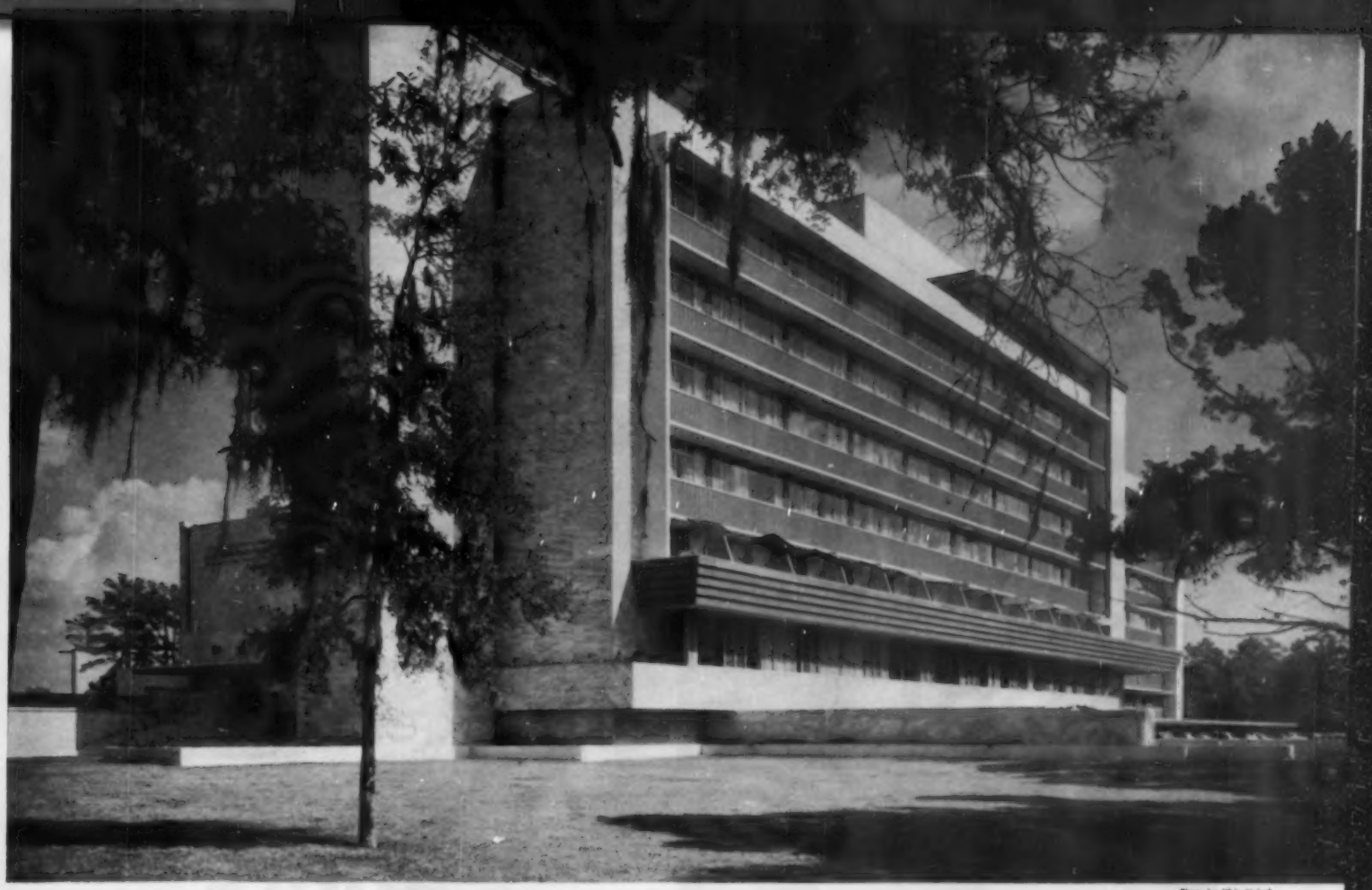

Photo by Ulric Meisel

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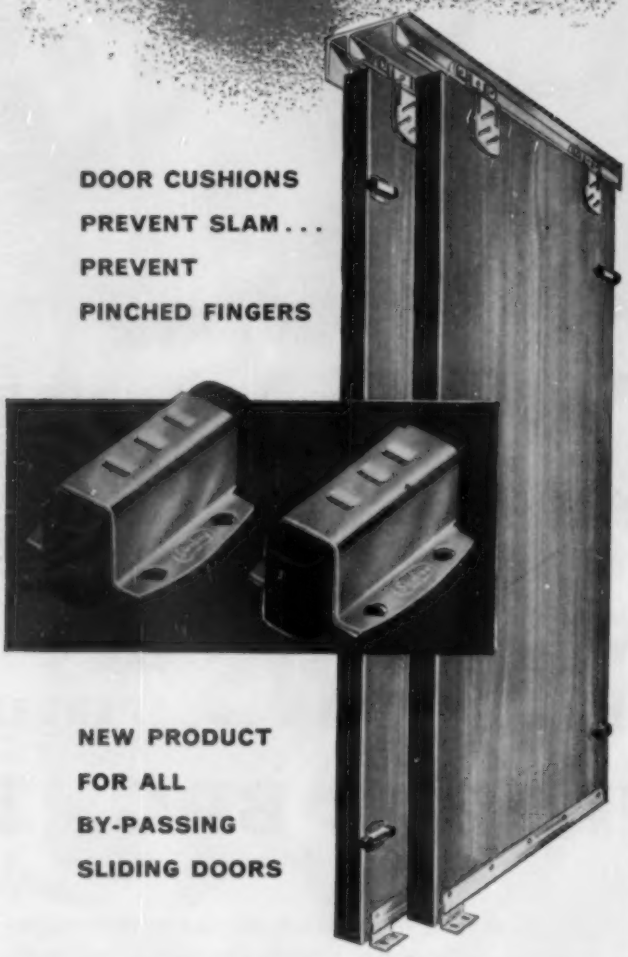

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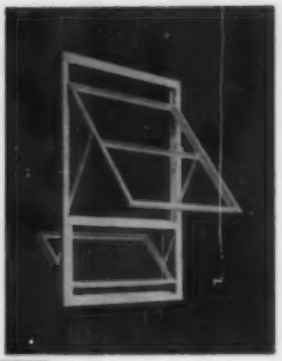

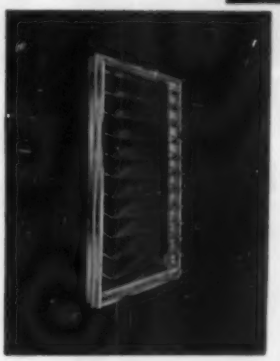

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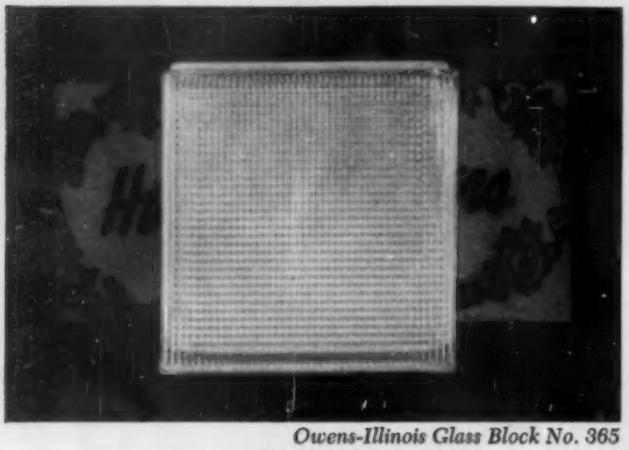

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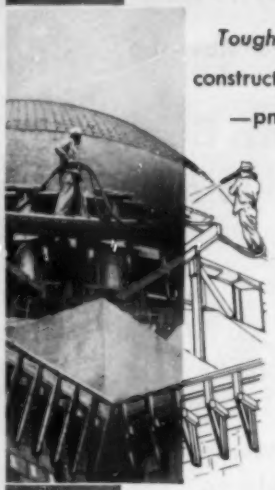

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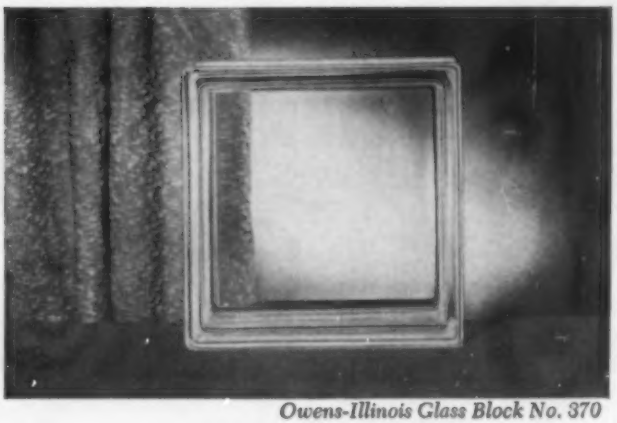

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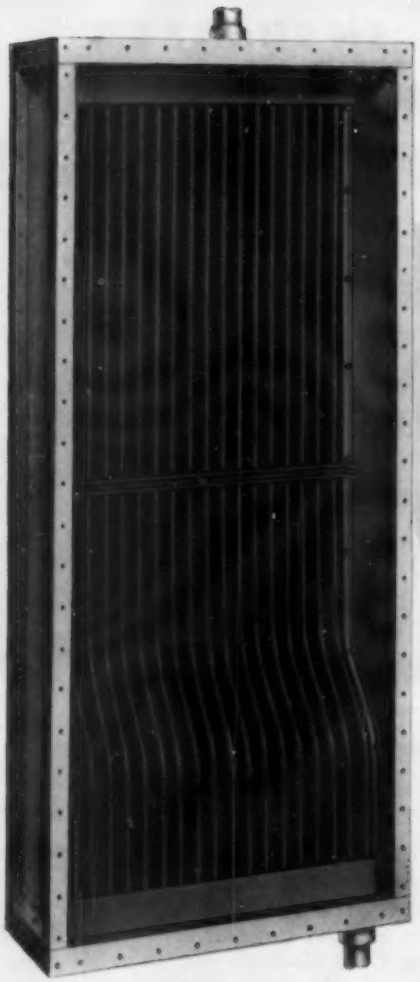

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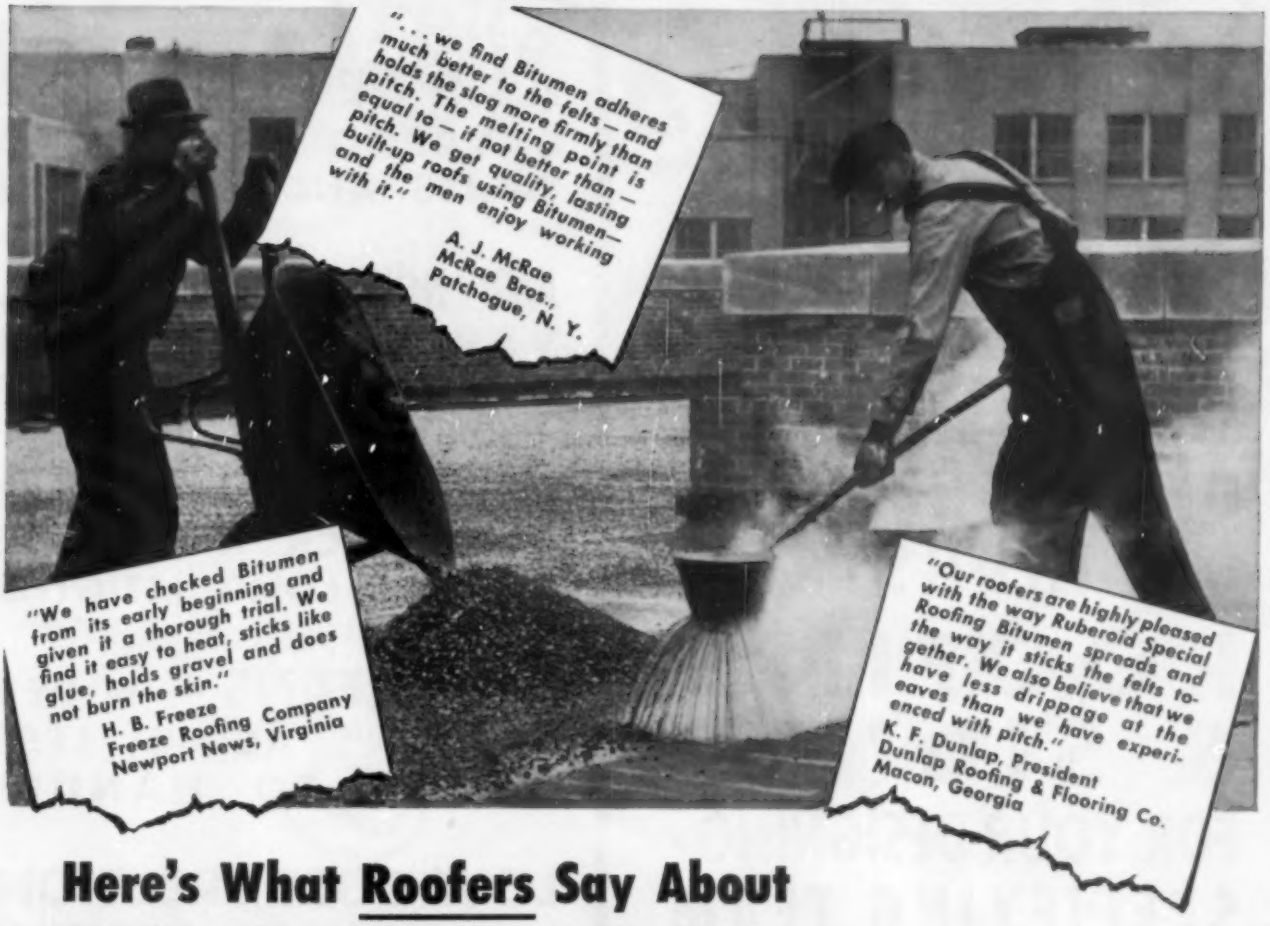
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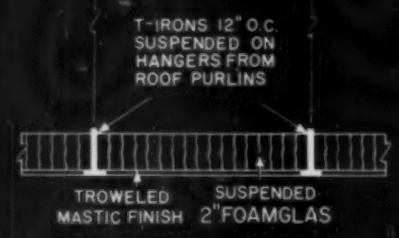
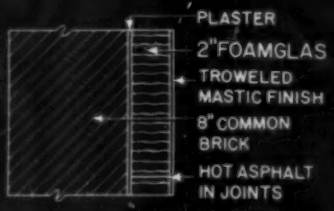
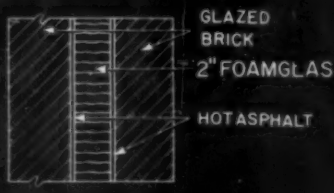


TYPICAL SUSPENDED CEILING SECTION

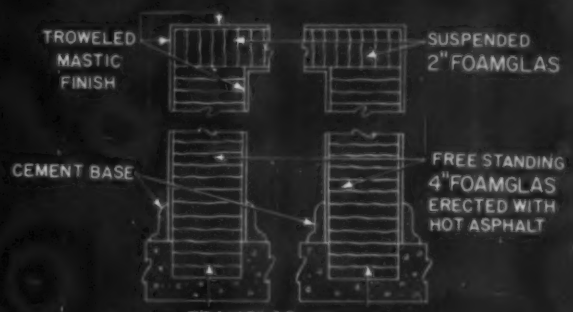


TYPICAL WALL LINING SECTION



TYPICAL COREWALL SECTION

ICING TUNNEL
TYPICAL SECTION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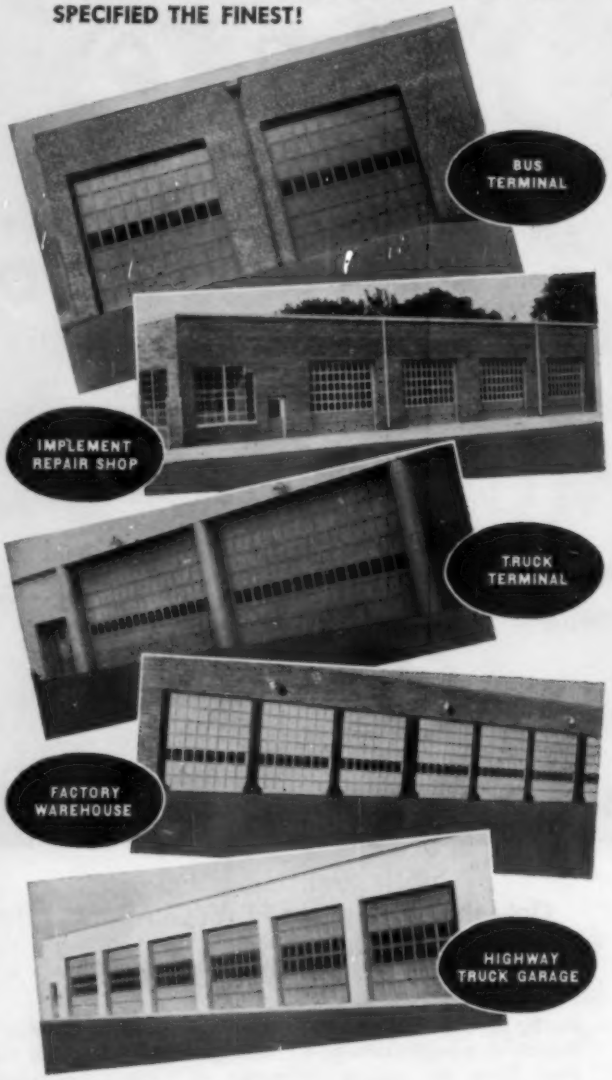

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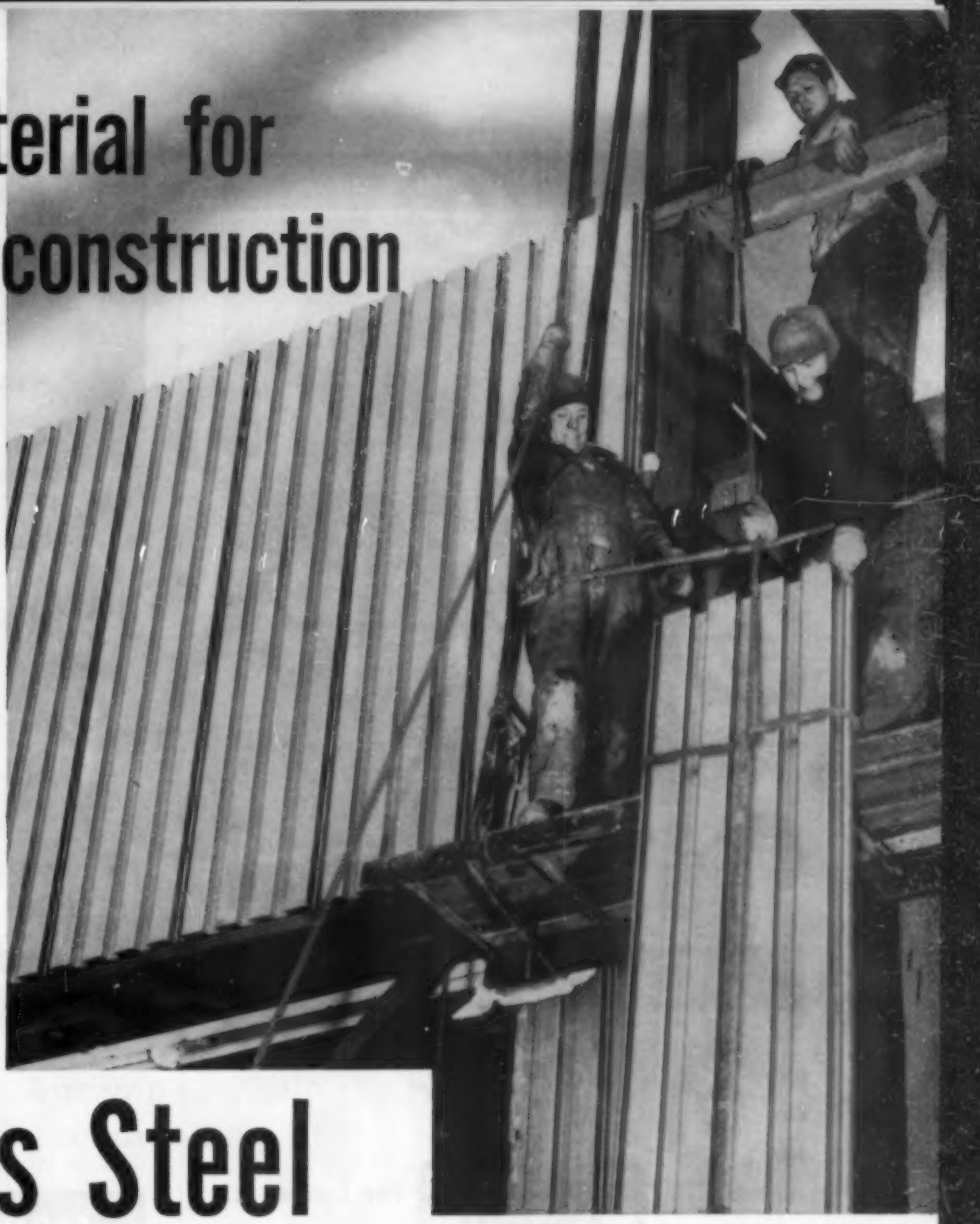

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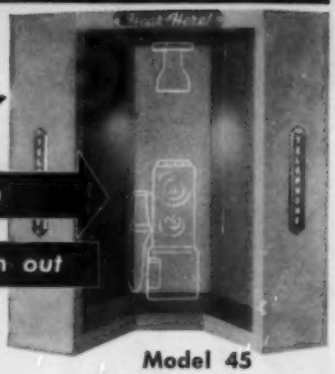

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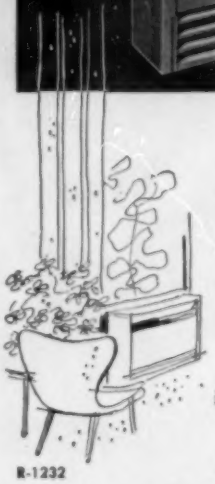

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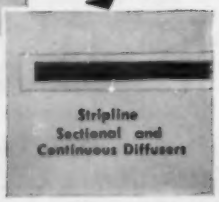

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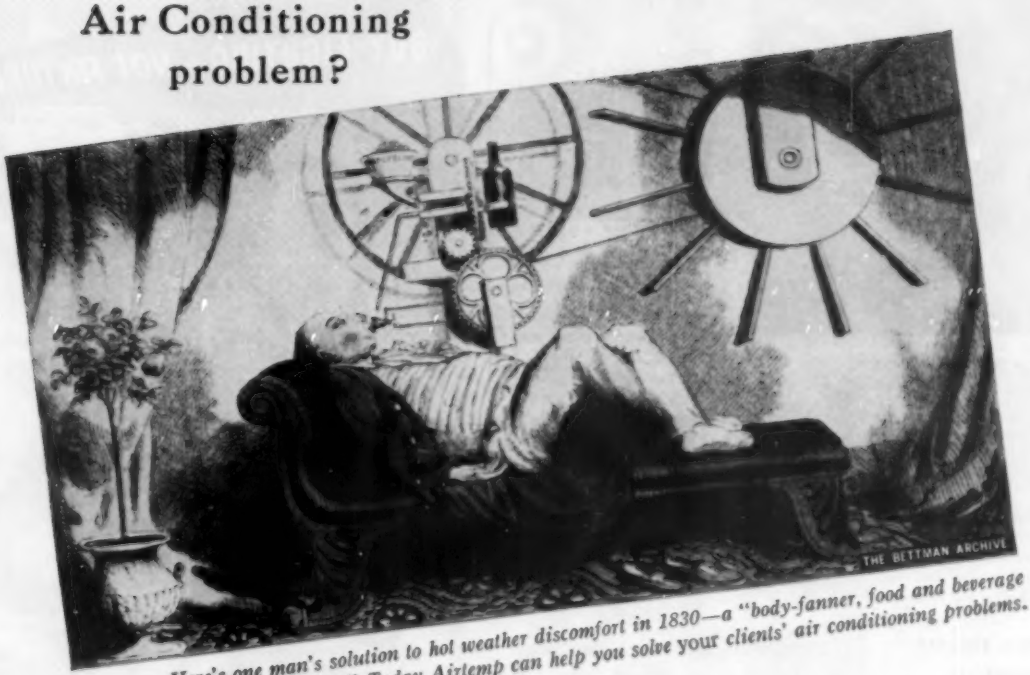

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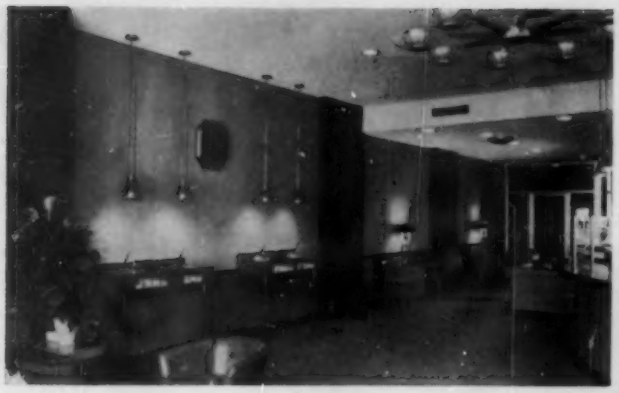

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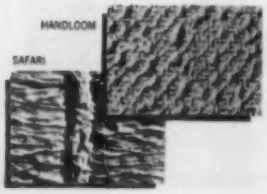

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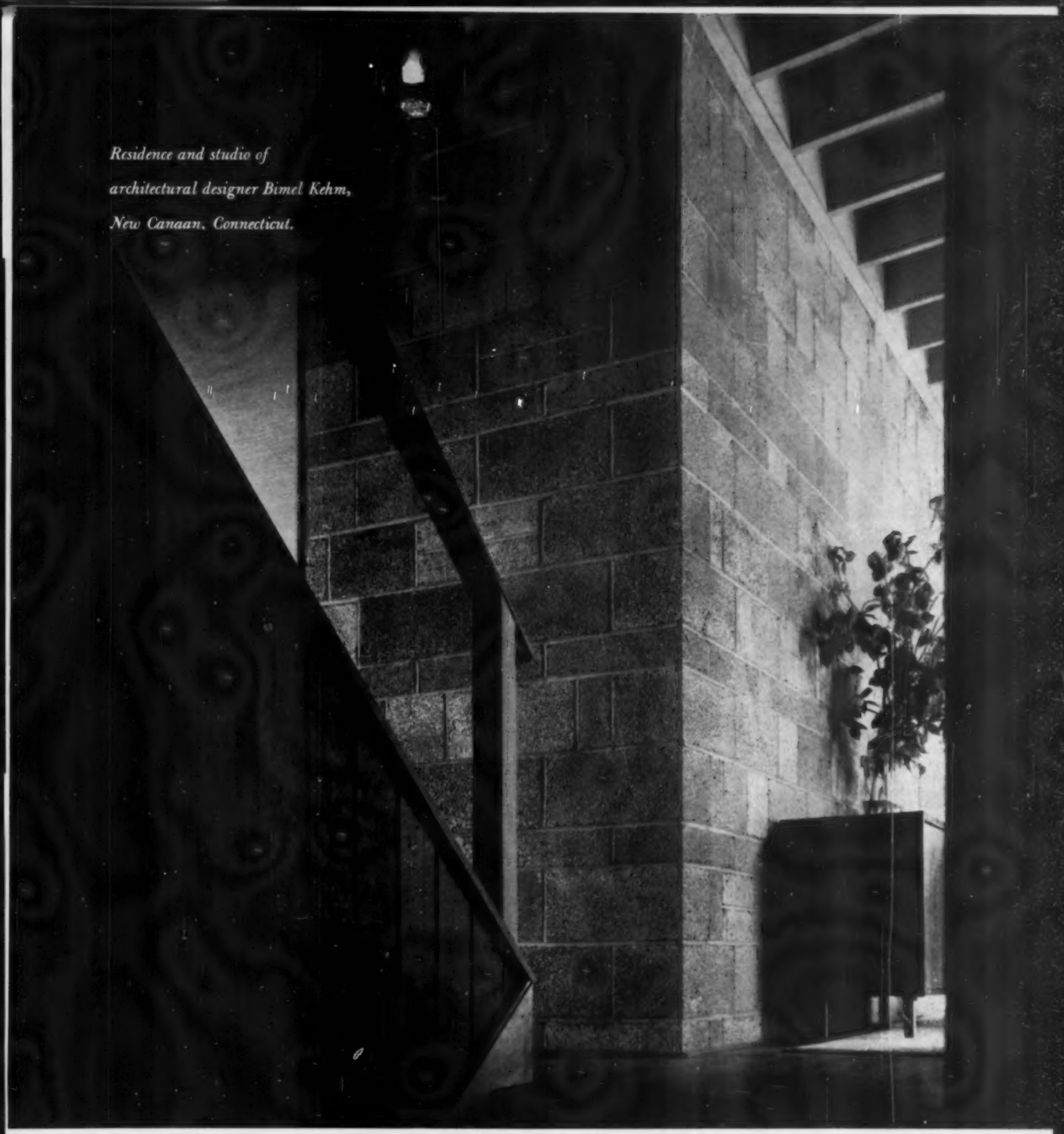

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American-Olean Tile Co. 226
American Telephone and Telegraph Co... 44
Andersen Corp. 166, 167
Anemostat Corp. of America 74
Armstrong Cork Co. 26, 27
Art Metal Co. 50, 51

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Benjamin Electric Mfg. Co., Leader Div... 61
Bruce, E. L., Co. 187
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Celotex Corp. 38, 39, 142
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Chase Brass & Copper Co. 54
Chrysler Corp, Airtemp Div. 223
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Congoleum-Nairn, Inc. 41
Connor Lumber & Land Co. 226
Corbin Wood Products Div. 215
Corning Glass Works 56
Curtis Companies Service Bureau 128

Day-Brite Lighting, Inc. 69
Douglas Fir Plywood Assn. 174, 175
Dunham, C. A., Co. 205
Duriron Co., Inc. 21

Facing Tile Institute 139
Federal Seaboard Terra Cotta Corp. 13
Flynn, Michael, Mfg. Co. 225
Formica Co. 130

Gate City Sash & Door Co. 36
General Bronze Corp. 209
Gunite Associates, Inc. 214
Guth, Edwin F., Co. 207

Halstead & Mitchell 196
Hauserman, E. F., Co. 1
Haws Drinking Faucet Co. 152
Hillyard Chemical Co. 126
Homasote Co. 168

Infra Insulation, Inc. 8
Inland Steel Products Co. .....3rd Cover
Insulite Div., Minnesota & Ontario Paper Co. 162, 163
International Cut Stone Contractors & Quarrymen's Assn. 222
International Steel Co. 156
Iron Fireman Mfg. Co. 64

Jamison Cold Storage Door Co. 71
Johns-Manville Corp. 72, 204
Josam Mfg. Co. 32, 33

Kawneer Co. 173
Kennatrack Corp. 145
Kentile, Inc. 144
Kewanee-Ross Corp. 43
Knapp Bros. Mfg. Co. 184, 185
Knoll Associates, Inc. 169

Laclede Steel Co. 73
LCN Closers, Inc. 22, 23
Libbey-Owens-Ford Glass Co. 140, 212

Macomber, Inc. 218
Mahon, R. C., Co. 5, 170, 171
Maple Flooring Manufacturers Assn. 68
Marble Institute of America, Inc. 66
Master Builders Co. .....2nd Cover
Mastic Tile Corp. of America 201
Medusa Portland Cement Co. 63
Mengel Co. 161
Michel & Pfeffer Iron Works, Inc. 200
Mills Co. 6
Minnesota Mining & Mfg. Co. 29
Mississippi Glass Co. 28
Mitchell Mfg. Co. 70
Modine Manufacturing Co. 222
Monsanto Chemical Co. 62

Natco Corp. 45

Onan, D. W., & Sons, Inc. 172
Owens-Corning Fiberglas Corp. 60
Owens Illinois Glass Co. 214, 215

Penn Metal Co., Inc. 198
Pittsburgh Corning Corp. 42, 219
Pittsburgh Plate Glass Co. 34, 35, 146
Portland Cement Assn. 188
Powers Regulator Co. 57
Pryne & Co., Inc. 30, 31

Rayner Mfg. Co. 220
Reinhold Publishing Corp. 229
Reynolds Metals Co. 194, 195
Rilco Laminated Products, Inc. 153
Roberts Weldon Rubber Co. 224
Robertson, H. H., Co. 176, 177
Roddis Plywood Corp. 53
Ruberoid Co. 217
Russell, F. C., Co. 186
Russell & Erwin Div. 192, 193

Schacht Associates, Inc. 11
Seaparcel, Inc. 46
Sedgwick Machine Works, Inc. 190
Selec-Temp Div. 64
Silvray Lighting, Inc. 14
Sjostrom, John E., Co. 24
Skylike Lighting, Inc. 14
Smithcraft Lighting Div. 224
Sonoco Products Co. 214
Southern Sash Sales & Supply Co. 181
Staedtler, J. S., Inc. 202
Sterling Hardware Mfg. Co. 210
Swedish Crucible Steel Co. 199

Taylor, Halsey W., Co., The 151
Timber Engineering Co. 202
Trinity Div., General Portland Cement Co. .....Back Cover
Truscon Laboratories 49

Ualco Aluminum Windows 181
Union Asbestos & Rubber Co. 25
United States Plywood Corp. 160
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From time to time we have applauded the growth of regional and local architectural awards programs. They seem to us a very reasonable way to stimulate and reward above-average design, and to bring those design achievements to the attention of the community through newspaper stories and exhibitions of the results. In general, there are two types of such local awards programs: those run by AIA Chapters or other architectural groups (regional councils, and so on); and those conducted by civic groups, such as Chambers of Commerce.

Either method can result in effective popular education and good public relations for the design professions, and either method (unfortunately) can fall flat on its face. Architects have had to learn that there just can be no selfish approach to such programs; that they are for the over-all good of the group. As in any "competition" an objective jury must be selected and given a free hand. There certainly is no harm in having local representation on that jury, although most of the more successful programs have used entirely "outside" juries. Also as in the case of well-run competitions generally, architects with critical ability should form the majority of the jury membership. The layman's advice and point of view are important; final judgment of design quality, however, requires a trained perception, a historical and social perspective, and a technical knowledge which the architectural critic alone possesses. Further, it is our experience that a jury of three or, at the most, five members, is most workable. A larger group becomes unwieldy—and the selections are apt to be unsatisfactory compromises.

Most lay groups sponsoring architectural awards programs also have come to realize that the results are more impressive when they are objectively reached; the community back-patting which might otherwise result is usually pretty obvious. A few years ago, the Washington, D.C., Board of Trade Architectural Awards (a well-run program with selections made by a distinguished jury of out-of-town architects) were presented with a critical jury report that hit the newspapers with a bang and made many local citizens take a second look at the good and the bad buildings in the area. This is what *The Architect at Mid-Century* (that work I keep plugging) means, when it says of an improved urban environment: "American architects can render valuable assistance, but only the people themselves can insist upon its accomplishment."

Another annual awards program is run by the Queens Chamber of Commerce, in that part of the City of New York that lies across the East River from Manhattan. This year, the jury was composed of 11 architects, all from the New York area (including the presidents of all the many local architectural societies) and eight nonarchitects—all from Queens. Nine bronze plaques and eight honorable-mention scrolls were awarded. Two of the bronze-plaque winners are illustrated above.

Thomas H. Creighton

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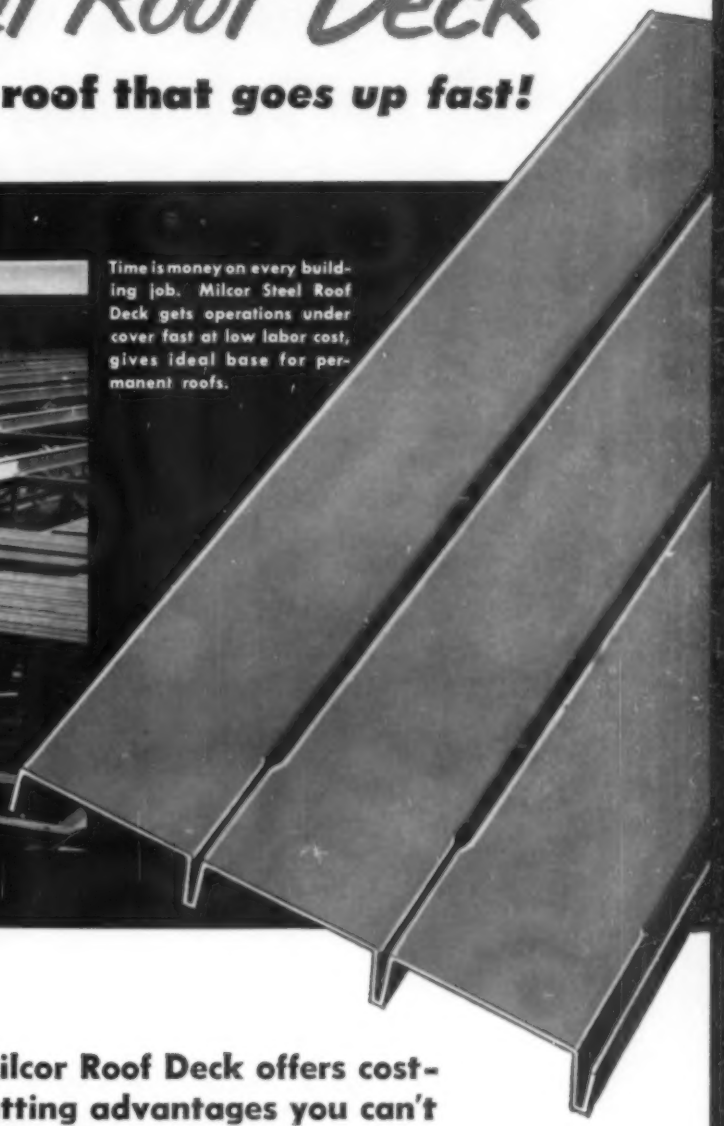

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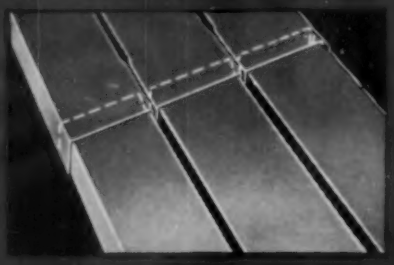

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